HE PLAYED
INDUSTRIAL ROULETTE . . . . AND LOST (See page 10)

Safety Maintenance

EST. 1901 • AMERICA'S PIONEER MAGAZINE IN ITS FIELD • MARCH, 1960 • 50¢
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Watchemoket Safety Spectacles, Cover Goggles, Eye Shields, Welding Goggles—from your Eye-Savers Dealer

(For details, use Key # P-1 on card on page 1)

BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Vision Requirements for Drivers .. 275
American Optical Co. Of interest to fleet operators and those responsible for company vehicles is a new chart that outlines the states' requirements for motor vehicle operators. Conveniently arranged by state, the chart lists license requirements, disqualification factors, examination requirements (including visual), limited licensing, and re-examination rules. Bulletin also gives data on the visual skills necessary for safe driving.

Coated Fabric Work Gloves 276
Granet Corp. Well illustrated catalog describes coated fabric work gloves for a wide range of occupations. Included are neoprene, vinyl, natural rubber with featured listings of the physical properties of each. Useful chart shows resistance of gloves to many industrial chemicals.

Metal Frame Safety Glasses 277
Bausch & Lomb Optical Co. Excellent photographs show clearly the construction details of a line of metal frame safety glasses in this 4-page bulletin. It describes how lenses can be easily assembled in the versatile frames which permit addition of several types of side shields.

Two-Color Linemen's Gloves 278
Charleston Rubber Co. Illustrated folder describes a safety glove for electrical workers. The inner layer of the rubber glove is red, while the outer layer is black. The two-color construction immediately signals cuts and defects in the gloves.

Universal Bridge Safety Glasses . 279
Willson Products Div., Ray-O-Vac Co. This bulletin gives details on a plastic-frame industrial safety spectacle with a universal bridge that fits 95% of people and is available in three lens sizes. Bulletin shows how this model simplifies eye protection programs and spectacle maintenance.

PLANT MAINTENANCE

Roadway Patching Material 280
The Monroe Co. A new circular describes an improved patching material that can be used on driveways, parking lots, service station plazas, etc., in any weather.

Safety Gratings & Stair Treads .. 281
Bustin Steel Products Co. A new 24-page handbook covers a full line of safety gratings, stair treads, safety edgings and step bars. Including six types of non-slip gratings, the booklet shows adaptations for work platforms, ladders, ramps, manhole covers, etc., with four pages of safety accessories for transportation.

Lightweight Concrete 282
The Master Builders Co. The wide use of lightweight aggregate concrete is featured in this 20-page brochure. Thirteen construction projects are featured, covering the use of lightweight concrete for columns, beams, floor slabs, multi-story structures, thin shell concrete, and bridge decks.

FIRE PROTECTION

Interior Fire Fighting Equipment . 283
Fyr-Fyter Co. The 1960 catalog of equipment for fighting interior fires contains the latest engineering data on sprinkler systems, carbon dioxide systems, smoke detection equipment, dry chemical systems, foam systems, fire hose & extinguisher cabinets, hose racks & reels, siamese connections, all types of portable extinguishers and other accessories. All products are carefully indexed and shown in the sequence in which they would normally be purchased.

Safety Cans & Oilers 284
Eagle Mfg. Co. This 1960 catalog illustrates and describes the entire line of oilers, safety cans, and oil and gasoline containers. The catalog is available in two forms: No. 60 General Catalog and No. 60-C Condensed Catalog.

Commercial Kitchen Fire Safety . 285
Walter Kidde & Co., Inc. Fire safety for commercial kitchens, deep fat friers, hoods and ducts is the subject of a new 4-page brochure which features automatic carbon dioxide extinguishing systems. Schematic diagram shows a typical arrangement of the fire smothering equipment, and photographs show actual installations.

INDUSTRIAL HYGIENE

Versatile Ventilation Fans 286
Sturtevant Div., Westinghouse Electric Co. This illustrated brochure describes tube-axial fans for mounting directly in ducts or stacks for both exhausting (dusts, fumes, gases, vapors, high temperature or corrosive air) and supply (product cooling, process air, make-up air, combustion air, drying, motor ventilation). Includes performance, weight and dimension charts for various sizes.

New Packaging of First Aid Items 287
Mine Safety Appliances Co. A new flip-top box for multiple-use first-aid units is described in this bulletin, which highlights construction features that include resistance to tearing, sealed-in protection, and im-

(Continued on the next page)

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MARCH, 1960 **Please send me the following free data**

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Free Bulletins (Cont'd)

proved convenience. Also lists the various first aid items available in this new type package.

Unit-Packaged Toilet Cleaner ... 288
Platt & Smillie Chemicals, Inc. This 4-page bulletin describes an efficient and safe method of applying cleaners to toilet bowls by means of pre-packaged units of cleaner which are dropped unopened into the bowl. New packaging eliminates use of bottles (with possible breakage) and prevents acid splash, fuming or other contact with the cleaning chemicals.

MISCELLANEOUS

Adhesive Identification Signs 289
W. H. Brady Co. A new catalog features 15 different products to aid safety directors and maintenance engineers in planning and executing safety and maintenance identification programs. Includes data on pipe marking systems, wire and electrical equipment identification, machinery lubrication marking, and hazardous area and equipment notification.

How to Protect Dies 290
MICRO SWITCH Co. Practical ways for protecting machine tool dies by means of precision switches are described in a series of five sheets. Including cross-sectional diagrams and construction details, the sheets cover misfeeding of material in a progressive die, faulty pressure pads, pile-up of parts, pilot pin breakage in slide-fed dies, and two-position dies.

Daylight Fluorescent Paints 291
Lawter Chemicals, Inc. This illustrated brochure describes how high-visibility daylight fluorescent colors can be used to make safety signs and warning markings more effective. Includes chart of recommended colors for various safety applications and also includes information on uses of these colors in aviation, packaging, transportation, dials, sporting goods, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
112	Anti-Slip Soles
113	Oil-Resistant Soles
114	Welding Helmets
	FIRST AID AND HYGIENE
121	Skin Cleansers
122	Sanitary Drinking Facilities
123	Wash-up Facilities
124	Salt Tablets
125	Resuscitator Tubes
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Throat Medication
131	Eye Wash Fountains
132	Portable Ventilators
133	Dust Collectors
135	Hearing Protectors
	FIRE PROTECTION
139	Fire Retardant Paint
140	Fire Extinguishers
141	Safety Cans
142	Fire Alarms
143	Safer Solvents
144	Degreasing Machines
145	Drum Safety Valve
146	Asbestos Textiles
147	Incinerators
148	Watchmen's Control Systems
149	Fire Blankets

Key Number	Subject
	LIGHTING AND WARNING DEVICES
150	Alarms & Warning Lights
151	Powered Megaphones
153	Fluorescent Lamp Guards
154	Emergency Lights
	MAINTENANCE
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Floor Cleaning Machines
169	Toilet Sanitizers
	LADDERS & HANDLING
170	Ladders
171	Ladder Safety Devices
172	Scaffolds
173	Work Platforms
177	Carboy Pumps
178	Machine Guards
	GUARDS
179	Power Press Feeders
180	Safety Tools
181	Vacuum Sheet Lifters
182	Valve Operators
184	Safety Lock-Outs
	EDUCATIONAL AIDS
191	Safety Signs
192	Safety Awards & Emblems
193	Employee Safety Guide
195	Changeable Letter Signs

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Safety Maintenance

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Volume 119, Number 3 **March, 1960**

EDITORIAL

Industry's Big Con Game 4

ACCIDENT PREVENTION

Mobile Feeding Units 9
Anyone for Industrial Roulette? 10
(eye protection series) by JAMES E. O'NEIL
Automatic Light Switching For Industry 13
by E. L. SCHACHT
Safety Equipment for Handling Isopropylamine 17
Keeping Up With Materials Handling Developments 48
(materials handling series)
New Accident Prevention Bulletins 1
New Accident Prevention Products 61

MAINTENANCE

"SM" Goes to the Maintenance & Engineering Show 7
Automatic Light Switching For Industry 13
by E. L. SCHACHT
New Maintenance Bulletins 1
New Maintenance Products 61

INDUSTRIAL HYGIENE

Industrial Hygiene News 27
Get the Cleanliness Message Across 28
(skin protection series)
How Two Companies Control Lead Poisoning 31
New Industrial Hygiene Bulletins 1
New Industrial Hygiene Products 61

FIRE PROTECTION

The Fire Front 41
Double-Duty Fire Protection 43
Why Industrial Plants Need Good Fire Protection 44
by W. E. ROSSNAGEL
New Fire Protection Bulletins 1
New Fire Protection Products 61

SPECIAL DEPARTMENTS

Bulletins & Catalogs 1
Reader's Inquiry Card 1
What's Your Problem? 2
The Future Shows 6
Another Injury Checked 16
"Safety Maintenance" Salutes 18
Achievements & Awards 22
Safety On Film 24
The Safety Shelf 34
What's the Law? 36
Inside the Trade 59
What's New? 61
Index to Advertisers 66

Cover picture of roulette wheel by George A. Douglas from Philip D. Gendreau.
Superimposed picture of blind man from Chicago Eye Shield Co.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

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it's SAFE to say

● INDUSTRY'S BIG CON GAME

Only a madman would resort to the game of Russian roulette in which he presses a revolver to his temple while attempting to guess which chamber will or will not contain the fatal bullet. Less extreme but infinitely more widespread in our daily lives is another, equally treacherous form of roulette in which the participants are permitted to gamble their eyesight and in which the loser pays the heavy penalty of a lost eye.

One need not fly to Las Vegas or the principality of Monaco to engage in a gamble which apparently is perfectly legal in every one of the fifty states of the union.

As emphasized by James E. O'Neil, in the feature article, "Anyone for Industrial Roulette?" on page 10 of this issue, industrial roulette takes to the cleaners several thousand workers every day a wheel turns in American industry. And the law enforcement agencies of the country are not even aware that this gambling exists, nor could they do anything about it even if they knew. This game, which does not even have the saving grace of paying off a percentage to the "house," has as its base rule guessing which man on the job will be the next to be struck in the eye with an almost inevitable loss of vision. By comparison, the worst shell game on the carnival circuit gives a better break to the suckers!

It is all very well to use our anti-gambling laws to protect a man against the chance of losing his financial resources. But, organizations which would never countenance poker, dice or other games of chance on the premises do absolutely nothing about the insidious, day-to-day gambling with eyesight and actually on company time, too!

This form of industrial roulette is founded on a form of partial protection which always lulls us into a false sense of security. A man engaged in grinding, chipping or welding is given a pair of safety spectacles but his buddy doing another job just three feet away or less is allowed to play industrial roulette. After all, why not—high stakes make the game "interesting"!

Many progressive companies in the nation have found a way of removing this roulette wheel from their plants literally overnight . . . management need not telephone the sheriff's office or call the local gendarmerie to break up this gambling, compared with which betting on the nags is almost a sure thing. All it takes is a mandatory rule that everybody, but everybody . . . visitors as well as workers, must wear an eye safeguard *everywhere in any hazardous area*, whether or not it be Big Brass escorting a delegation from the Pentagon or the boy with containers of coffee.

Chips can take wings and fly; pieces of a grinding wheel have been known to sail through the air with the greatest of ease; harmful light rays do radiate; dangerous chemicals can splash quite a distance and at very high speeds. It is in this area when the industrial roulette player finds the number coming up black after he has bet on the red. And the eyes have it!

● ● ● ●

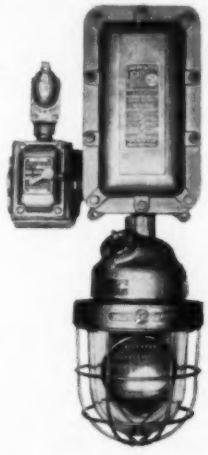
Obviously, safety eyewear should be bought on the basis of quality and conformity with accepted standards and codes. This is no field day for the Pinch-Penny fraternity or denizens of the bargain counter. But the finest, most efficient piece of eye protection ever produced never will give better odds in the game of industrial roulette if worn up above the forehead as an ornament or allowed to decorate the back pocket.

We can put an end to industrial roulette and go back to the shell game. The most we can lose is our money but at least we will not need any with which to purchase an artificial eye.

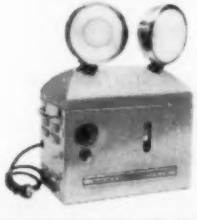
The innocent bystander watching the wheel in a gambling hall rarely loses; in the game of industrial roulette, he rarely wins!

Inadequate? Of Course . . .

BUT... HOW MUCH BETTER ARE YOUR EMERGENCY LIGHTS?



Just two of the many Watchmaster models available for your specific needs.

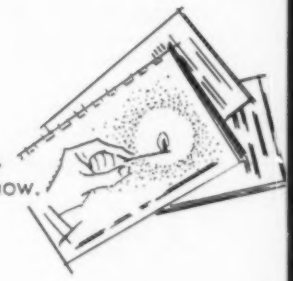


Life and limb are at stake when you specify automatic emergency lights. Be certain you get the added *safety margins* built into every Carpenter *Watchmaster*.

Watchmasters are expressly designed to perform under far more exacting conditions than would normally be encountered in use. Every unit . . . every component . . . is engineered to do its job . . . and then some.

These extra safety margins, at the same time, assure longer life and less maintenance . . . adding up to lowest cost over the years.

There is a Carpenter Watchmaster model for every need (including hazardous exposures) and every budget.



TECHNICAL SPECIFICATIONS

and full details are available for the asking. Write for your Watchmaster information file now.

(For details, use Key # P-2 on card on page 1)

CARPENTER MFG. CO.

659 Bradley Street, Somerville 45, Mass.

Philadelphia, Pa. *March 9–10*

Twenty-Sixth Annual Regional Safety & Fire Conference and Exhibit (Bellevue-Stratford Hotel). Harry H. Verdier, executive director, Safety Council, Chamber of Commerce of Greater Philadelphia, 121 S. Broad St., Philadelphia 7, Pa.

Fort Wayne, Ind. *March 15–16*

1960 Northeastern Indiana Safety Conference and Exhibit. Ivan A. Martin, Safety Council Manager, Chamber of Commerce Building, Fort Wayne, Ind.

Boston, Mass. *March 21–22*

Thirty-ninth Annual Massachusetts Safety Conference and Exhibit (Hotel Statler). Bert Harmon, Manager, Massachusetts Safety Council, 54 Devonshire St., Boston 9, Mass.

New York, N. Y. *March 28–April 1*

Thirtieth Annual Greater New York Safety Convention and Exposition (Statler Hilton Hotel). William J. Farley, convention secretary, Greater New York Safety Council, Inc., 60 E. 42nd St., New York 17, N. Y.

Dallas, Texas *March 28–30*

Twenty-first Annual Texas Safety Conference and the Governor's Highway Safety Conference (Adolphus Hotel). J. O. Musick, General Manager, Texas Safety Assoc., 830 Littlefield Bldg., Austin, Tex.

Berkeley-Oakland, Calif. *Mar. 29–30*

Eighth Annual Northern California Safety Congress & Exhibits (Hotel Claremont). Clinton W. Dreyer, managing director, Eastbay Chapter National Safety Council, 1322 Webster St., Oakland 12, Calif.

Los Angeles, Calif. *April 11–13*

Seventh Annual Western Safety Congress and Exhibit (Ambassador Hotel). Greater Los Angeles Safety Council, 3388 W. 8th St., Los Angeles 5, Calif.

Detroit, Mich. *April 12–14*

Thirtieth Annual Michigan Safety Conference and Exhibit (Sheraton-Cadillac Hotel). Ben Duguid, executive secretary, % Allstate Insurance Co., Detroit, Mich.

Buffalo, N. Y. *April 12–14*

Twentieth Western New York Safety Conference and Exhibit (Hotel Statler-Hilton). Clifford H. Seymour, executive secretary, Western New York Safety Conference, Inc., P. O. Box 315, Niagara Falls, N. Y.

Columbus, Ohio *April 19–21*

Thirtieth Annual All-Ohio Safety Congress and Exhibit (Neil House). Arthur W. Moon, congress manager, 400 So. Front St., 3rd Floor, Columbus 15, O.

Indianapolis, Ind. *April 27–28*

Thirteenth Central Indiana Safety Conference and Exhibit (Claypool Hotel). Indianapolis Safety Council, 320 N. Meridian St., Indianapolis 11, Ind.

Bethlehem, Pa. *May 2–4*

Thirty-Third Annual Eastern Pennsylvania Safety Conference (Hotel Bethlehem). Harold A. Seward, secretary, Lehigh Valley Safety Council, 602 E. 3rd St., Bethlehem, Pa.

Winston-Salem, N. C. *May 4–6*

Thirtieth Annual North Carolina Statewide Industrial Safety Conference (Robert E. Lee Hotel). H. S. Baucom, Director of Safety, North Carolina Industrial Commission, Raleigh, N. C.

Richmond, Va. *May 5–7*

Virginia Safety Association Conference (John Marshall Hotel). Va. Safety Association, 2501 Monument Ave., Richmond 20, Va.

Chicago, Ill. *October 17–21*

Forty-Eighth Annual National Safety Congress and Exhibit (Conrad Hilton, Pick-Congress, Sheraton Towers, Morrison, and La Salle Hotels), R. L. Forney, Secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

SM GOES TO — The Maintenance and Engineering Show

The largest Plant Maintenance & Engineering Show in the 11-year history of the exposition took place at Convention Hall, Philadelphia, Jan. 25-28. Exhibit space, which covered five acres, was 20 percent greater than last year, according to Clapp & Poliak, Inc., New York, the exposition management.

Visitors from Thirty Countries

Four hundred companies exhibited and about 20,000 visitors attended from some thirty countries. The show is one of the three largest annual industrial expositions in the country.

The huge exhibit contained some 10,000 different industrial products. About 3,000 experts were available to answer questions for visitors. Virtually every major corporation, and thousands of smaller companies, had executives and engineers at the show to find ways for cutting the huge maintenance bill of industry.

As automatic processes for production increase, the cost of maintaining the machines and plants rises. Some highly automated industries now expend as much as 80 percent of their factory payrolls for maintenance.

Accompanying the show was the 11th annual Plant Maintenance & Engineering Conference, one of the largest engineering conferences of the year. More than two thousand engineers heard over 70 speakers address 43 sessions. These speakers were drawn from a broad industrial and geographical cross section.

Immediately following the show, two hundred top executives gathered in ten Executive Study Groups to discuss major problems of maintenance in small, informal sessions. These executives exchanged information about recent developments in their respective companies.

Following are summaries of the material presented by some of the speakers at the general sessions.

***"Evaluating Maintenance Performance":* Tom A. Mostyn, Superintendent, Mail Well Envelope Co., Portland, Ore.**

Whether we like it or not, maintenance performance is judged every day. Managers must evaluate it to get an over-all picture of the proficiency of the organization. The big problem is to define what you should expect as good maintenance performance. However, we can define how maintenance

affects productivity and company profit.

Maintenance can be evaluated in terms of the downtime of machinery caused by scheduled or emergency maintenance, or of the maintenance cost per unit of production or dollar of sales. We prefer a third method: the ratio of maintenance man-hours per thousand kilowatt hours.

Other ways of evaluating objectively are by keeping records of the number and cost of emergency call-ins, also of maintenance labor overtime, of the percentage of total work orders processed through a planning staff, of the percentage of work orders started the same day as scheduled and completed within one day.

Utilization of labor can be measured by determining the percentage of man-hours spent on craft work as opposed to time for preparation, traveling, clean-up, etc. Also compare actual time with estimated time. Load charts, too, can compare the scheduled back-log of work with available crews. Trends in the number of jobs completed each month will roughly measure the productivity of crews. The average time between the wanted completion date and the actual completion date will show how well maintenance is meeting its demands. Average times for job completion show the ability of maintenance to avoid interruptions to their work.

Each of these indicators doesn't mean much by itself; but together they form a picture of maintenance performance.

***"Preventive Maintenance At Work":* J. F. Thornton, General Maintenance Superintendent, Natural Gasoline Dept., Phillips Petroleum Co., Bartlesville, Okla.**

The percent of total maintenance which is preventive in nature is not yet as high as it should be. The optimum percentage varies with the circumstances and the type of industry. Generally we think of preventive maintenance as a procedure to prevent costly equipment failures. We should also think of it as a means of preventing costly maintenance. With the profit objective in mind the best kind of maintenance would be no maintenance—if it were possible. Without the profit objective in mind we are prone to let techniques exceed our purpose and preventive maintenance may become a fancy set of procedures for doing unnecessary work. Preventive maintenance must contribute to the profit objective of the enterprise. The letters PM should mean profit maintenance.

***"The Place of the Maintenance Function In Purchasing":* Philip G. Damm, Chief Plant Engineer, Merck Sharp & Dohme Div., Merck & Co., Inc., Philadelphia, Pa.**

At our plant, the engineering department has a good, healthy, workable arrangement with Purchasing. Here are some points in establishing a workable relationship with Purchasing: 1. Maintain good communications; 2. Try to specify what you want as completely as possible; 3. Keep Purchasing informed of any ordering arrangements made with visiting salesmen; 4. Do not order material without going through Purchasing; 5. Use requisitions and other purchasing procedures; 6. Have a purchasing engineer or buyer who is familiar with your engineering equipment and problems; 7. Buy good equipment, but there is no point in buying equipment that will outlast excessively the process or use for which it is purchased; 8. Remember that maintenance and purchasing are separate functions—cooperate, but don't trespass in their area; 9. Do not mark requisitions "Rush" unless they actually are. Do more planning so jobs are not rushed; 10. Standardize where feasible.

Safety in Maintenance Operations

(From the address by R. C. Woodbury, Assistant Manager of Maintenance, Dow Chemical Co., Midland, Mich.)

"Safety is an area that requires the efforts of everyone to control. In our plant this is exactly the case, from management to craftsmen and back again.

A Safety Council composed of the Division manager, his Division heads and those in charge of the Safety Department meet each month. Each Division head then has a meeting with his managers, each manager with his superintendents, each superintendent with his foremen, and each foreman with his men. Safety suggestions and reviews of accidents then follow the same order in reverse. All meetings at each level are attended by a member of the Safety Department."

***"The Place of the Maintenance Function in Purchasing:* Walter F. West, Purchasing Engineer, Merck Sharp & Dohme Div., Merck & Co., Inc., West Point, Pa.**

In our company Purchasing is a centralized department through which all material needs of the company are procured. It is responsible for developing sources that are reputable and efficient and for seeing that for every purchase order we get the most value for the money. This does not mean buying products that cost the least—a Purchasing agent who looks at price only is not doing his job properly.

What can Purchasing do to cooperate better with Maintenance? 1. Have an efficient expediting setup so that on call it can advise Maintenance of the status of any order; 2. Know maintenance terminology, the pressures Maintenance is under, the problem of making something do until the right item is delivered; 3. Do not hold requisitions before ordering, but if it is necessary, let Maintenance know why; 4. Do not substitute items from a different manufacturer or of different specifications without a conference; 5. Communicate with Maintenance on all problems involving both, including new ideas; 6. Constantly search out new sources and have them available so any item or service can be bought promptly.

What can Maintenance do to cooperate with Purchasing? 1. Anticipate maintenance needs as much as possible to allow reasonable time for procurement; 2. Fill out requisitions completely with all specifications; 3. Keep Purchasing informed on any problems involv-

(Continued on page 38)

State of Maine Civil Defense Department displays new Mobile Feeding Unit. Fully equipped kitchen moves on own power.

Mobile Feeding Units

The State of Maine Civil Defense and Public Safety Department recently took delivery of seven newly developed mobile feeding units. These units are completely equipped to prepare and serve hot food to large groups of people in the event of disaster. Working in cooperation with the State of Maine Civil Defense and Public Safety Department, an auto body works developed and constructed these units.

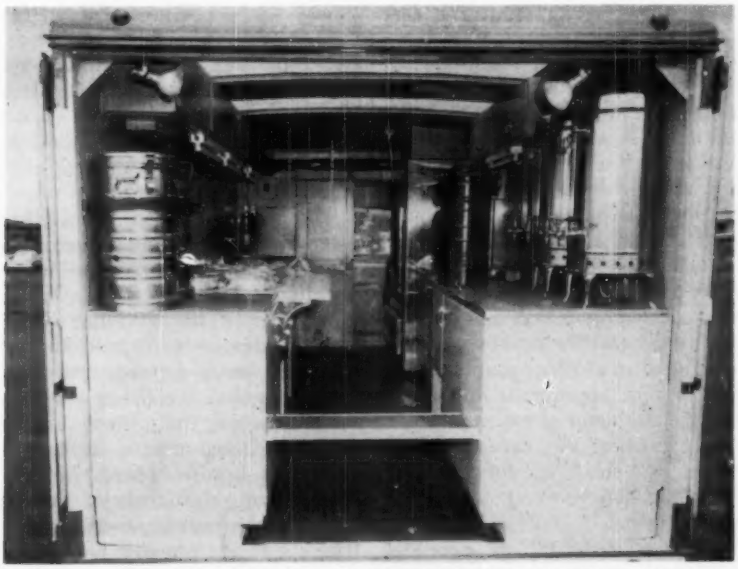
The units consist of a standard production model van specially modified and equipped as specified by the Maine Civil Defense Department, and installed on 1½ ton forward-control type chassis.

Inside Area Dimensions

The area inside the body, before installation of cabinets and equipment, is 168″ long, 88½″ wide, 78″ high. In this area, which is accessible directly from the driver's compartment, is installed an electric refrigerator, gas range, steam table, coffee urns, double stainless steel sink, 65 gallon water supply, counter work tops and stowage cabinets.

A portable gasoline-powered alternating-current generator, which is stored inside part of the stowage space, furnishes electric power for interior lights, floodlights, and refrigerator. Provisions are also included to operate this equipment from an outside electric supply.

The gas range, steam table, and coffee urns are operated by propane gas supply from gas bottles installed in the skirt of the body. A gasoline fired space heater provides heat in the working area. In addition to the water supply carried in the unit, there are provisions for connection to an external water supply hook up.



Unit has electric refrigerator, steam table, stainless steel sink with water supply, gas range. State now has seven such units.

Lit by Floodlights

The hot food is served through the rear of the truck which opens to full width and is illuminated by floodlights. The work space is illuminated by fluorescent lighting and translucent roof panels. There are electrically operated ventilators installed in the roof of the vehicle.

Pictures by courtesy of Boyertown Auto Body Works.

EYE PROTECTION SERIES
other articles April and May

ANYONE FOR

by **JAMES E. O'NEIL**
Director of Industrial Service,
National Society for the Prevention of Blindness

Every working day—on company time—thousands of industrial employees play "Industrial Roulette" . . . and about 1,000 of them lose. The only equipment needed for this treacherous form of gambling is a jaunty **"it can't happen to me"** attitude and a complete disregard for facts and the law of averages.

"Industrial Roulette is a con game with ground rules requiring someone to guess which employee might get hit in the eye. The 1,000 losers are the workers who suffer eye injuries every day industry turns a wheel.

More than 90 percent of these eye injuries are needless and could be prevented with basic safety eyewear—prevented, that is, if the safety eyewear is worn over the eyes rather than on the forehead, around the neck, or dangling from a pocket.

American industry has been grabbing at the brass ring on the eye safety merry-go-round for over a quarter century. Only a relative handful of progressive firms have copped the prize—the rest of the companies seem content to go for a very expensive ride.

As a starting point, then, let's establish the extent of industry's eye injury problem. This vast area of weakness is represented by an average of about 5,000 eye injuries for every five days of operation. Don't be lulled asleep by statistics showing compensable eye injuries. The task faced by industry is not just to put an end to compensable eye injuries but to eliminate **all** eye injuries. It can be done; it has been done; and most important of all, it must be done. Too much is at stake to do otherwise.

Setting aside every humane consideration, allowing 1,000 eye injuries to take place each work day is incredibly poor business practice. This under-statement becomes even more pointed by the general agreement of every recognized safety authority that at least 90 percent of all industrial eye injuries are needless, and **preventable.**

Worker in Stromberg-Carlson's maintenance shop wears safey goggles with side shields as he operates metal saw.

How Much Eye Protection?

To understand properly what constitutes adequate eye protection, first it is necessary to recognize where industry too often has taken a wrong turn, and too often continues in the wrong direction. Without a thorough understanding of what's wrong, it is impossible to propose, advocate, or do what's right.

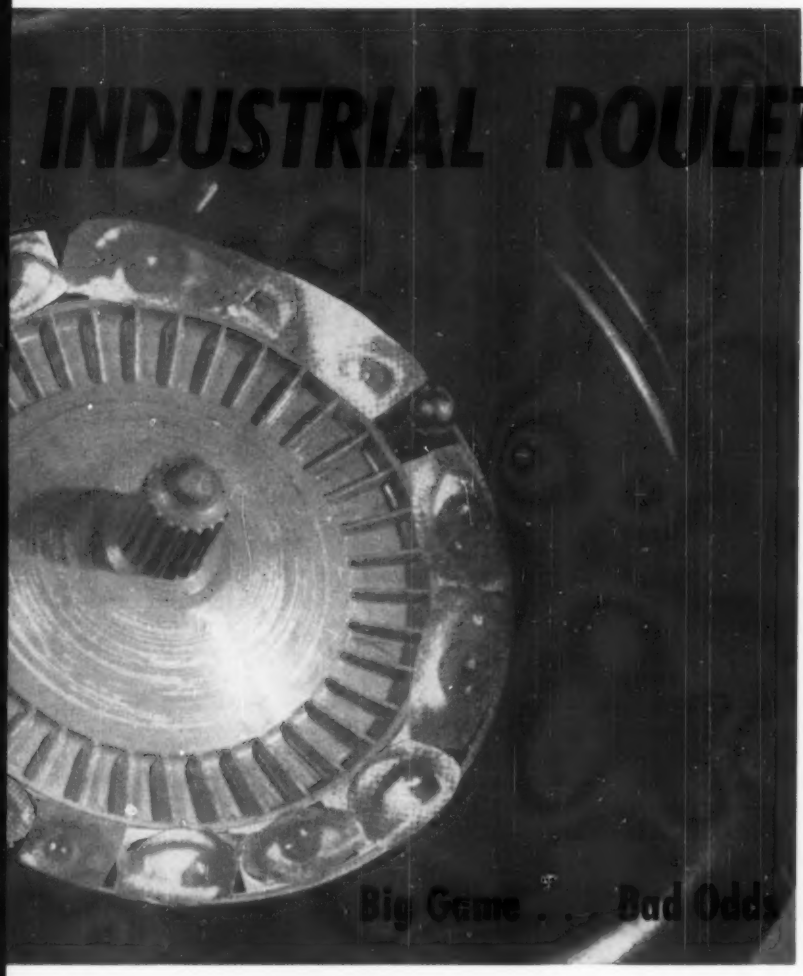
Fortunately the problem of eliminating needless visual damage is not at all complex. As a matter of fact it isn't really a problem—it has only been made to resemble one. The task of wiping the industrial safety slate clean of eye injuries is easy. Further, the excuses being offered as a substitute for measurable results simply won't stand close examination.

The way to eliminate needless eye injuries and loss of sight is to eliminate what is known as partial or job-selection-protection, i.e., safety eyewear being provided for only a few selected employees, based on the known or **assumed** eye hazards of specific machines or occupations. Now, let's see what's the difference between partial eye protection and **adequate** eye protection.

The employees of John Doe Manufacturing Company are cautioned to use cup goggles while grinding tool bits, etc. So far so good. But if the grinding wheel disintegrates or snags and throws the part being ground, who can guarantee that the flying particles will strike only the **protected** operator? If flying objects, molten or corrosive liquids could be depended on to strike only employees wearing eye protection, the industrial eye injury problem would disappear overnight.

Based on accident information

INDUSTRIAL ROULETTE ?



gleaned from the experience of thousands of members of the Wise Owl Club (persons whose eyesight has been saved by the wearing of safety eyewear), it can be stated that there are few if any industrial occupations that do not involve eye hazards, either in themselves *or as a result of their relationship to another occupation or arrangement of machines that also involve hazards to vision.*

To supply eye protection on a job-selection basis is to play "Industrial Roulette," a game which is really a comfortable gamble since it is played with someone else's chips. Anyone that insists on gambling with employees' vision should be willing to hold himself morally responsible for every eye injury in the plant.

The example of partial eye protection whereby grinder operators are protected, but the employees who work or pass nearby are not, can be applied to practically every industrial job classification. Keep in mind that partial or job-selection-protection (they mean the same thing) requires the use of a crystal ball. How many problems —important or otherwise—are resolved through the use of a crystal ball?

Now let's flip our problem over and look at the sure way, the easy way, the economically proved way to eliminate needless industrial eye injuries.

Only One Answer

The one proved way to eliminate unnecessary visual damage in industry is to institute a 100 percent (or universal coverage) eye safety program. Let's take another look at John Doe Manufacturing Company—but this time we'll show them doing things right, rather than wrong.

All shop employees at John Doe Manufacturing now wear eye protection throughout their entire workday. Actually, compliance has been made **a condition of employment**. Further, every visitor to the shop areas must don safety eyewear. No one will be permitted to enter the 100 percent areas without eye protection, whether it's top management, the company's biggest customer, the gal from the office who wants to check a production record, the man that fills the soft drink machine, outside contractors, or anyone. What's good enough for the shop employees of John Doe Manufacturing is good enough for visitors who must enter shop areas.

To grasp both the financial and sight-saving advantages of 100 percent eye safety, let's narrow our view, and look at just one department at the John Doe plant. We'll pick a department with 100 employees, and apply both partial and 100 percent eye safety. First, we'll play "Industrial Roulette" and select half of the 100 employees to wear eye protection. Fifty employees using side shield safety spectacles costing about $5.00 a pair, would require a total capital investment of $250.00. With half the employees protected there is a 50-50 chance of an eye injury or a lost eye. The dice will turn up wrong for one of the 50 unprotected workers and the $250.00 investment will be gone with the wind. Worse yet, nothing can prevent the same thing from happening again and again.

Now we'll double our capital investment by buying side shield planos for the other fifty employees. With a total of $500.00 invested—and all 100 workers wearing eye protection—eye injuries can't happen, and the first sight-

saving incident will prove the wisdom of making blue-chip investments.

A good eye safety program needs discipline, and you can't hope for success if every Tom, Dick and Harriet is allowed to meander through 100 percent eye protection areas, without something other than a faint hope between the eyes and every-day hazards.

Does Full Protection Work?

Now, here comes a crucial question. Do 100 percent or universal eye safety programs produce results? They do—without regard to the type or industry, or the number of persons employed.

At Rohr Aircraft in California, well over 40 million man-hours have been logged without a single eye injury; needless to say, universal eye safety programming did the trick. This plant has enrolled 182 Wise Owl members. Therefore, it seems logical to assume every plant in that area would have followed the progressive Rohr lead by now. Evidently logic has little to do with it because a competitor in the same part of the state is running about 600 eye cases per month.

The eye safety success story at Sperry Gyroscope in Long Island is well known—over 14 years without any employee losing an eye. You don't come up with results like that playing "Industrial Roulette." Sperry boasts of having enrolled 36 employees in the Wise Owl Club —they also can boast that their program has saved more money than it cost.

Another success story, and it will be tough to top this one, is the case of Ford Instrument Company, also in Long Island. This firm has completed 140 million man-hours without an employee having to learn how to see the world with one eye, instead of two. Again, you don't come up with results like this with a crystal ball.

Still another example is the 100 percent safety program at the Delco-Remy Division of General Motors, in Indiana. Over 16,000 employees are covered by this gate-to-gate program that has the solid support of the CIO-UAW; 180 workers are members of the Wise Owl Club. If labor can stand back to back with management to insure the vision of so many thousands of their union brothers at Delco-Remy, then it seems reasonable that they should make similar stands in every city and hamlet in the nation. Unfortunately, both labor and management too often overlook eye safety opportunities, and at the same time their specific responsibilities for ridding workplaces of the plague of needless visual damage.

If management insists that safety is their responsibility, and theirs alone, then let them get on with it, and get the total job done. But should management falter and want to play "Industrial Roulette," then labor has the obligation to see that the eyesight of its members is not endangered unnecessarily.

It is difficult to understand why industrial management as a whole has not been more concerned about whether its employees can see well enough to perform their work safely and efficiently. Visual inefficiency and unnecessary eye damage relate directly to productivity and profits. Anything that affects productivity and profits—the life blood of industry—should certainly be of considerable interest to management, and to the firm's stockholders.

Undoubtedly, a large proportion of the nation's industrial accident toll might be attributed to employees whose visual capabilities had not been tested, corrected if necessary, and properly protected. To take an extreme example, what would the productive potential of industry be if all workers were blind?

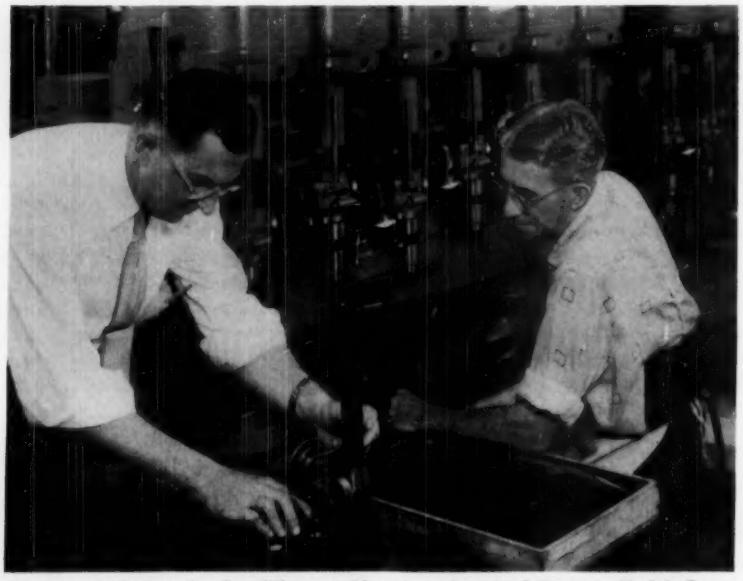
Some ill-advised practices are starting to crop up in the eye safety game—if you can call such a serious undertaking a "game." No one should lose sight of the prime importance of the American Standards—Bureau of Standards Eye Safety Code. This code, and its requirements regarding the strength and flame resistant properties of safety lenses and frames, is in fact the backbone of industrial eye protection. Without this code you would have chaos.

Safety lenses in jazzy frames—even though they make employees look like movie stars—do **not** meet the Code. Let one employee suffer visual damage due to sub-standard eye protection and you and your company can face legal battles that will make Custer's Last Stand look like a meeting of the Mutual Admiration Society.

To make, advocate, or condone the use of half-safe eye protection —in other words, to circumvent the Code—is to court disaster.

Both plano as well as corrective-protective safety eyewear should be individually fitted. Safety spec-

(Continued on page 14)



Foreman and operator in milling machine department of Eastman Kodak Company's optical division check precision bore. Note safety glasses, a rule for all.

AUTOMATIC LIGHT SWITCHING FOR INDUSTRY

by E. L. SCHACHT
Chief Engineer
Lightguard Electronic Mfg. Co.
Houston, Texas

It is better to light one candle," says an old Chinese proverb, "than to curse the darkness."

Today it is no longer necessary to stumble about in the dark, groping for the toggle switch, and risking injury on obstacles accidently left in the way by the day shift.

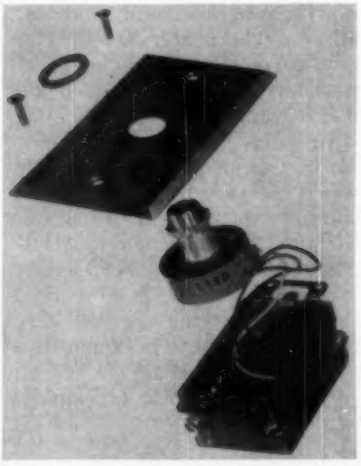


Fig. 2. Switch plate and the automatic switching elements for use where control device is away from fixture.

With a new, extremely compact photo-electronic switch, individual lighting fixture control has become simpler and less expensive. A fixture equipped with the photo-electronic switch will come on at dusk automatically, or when the light intensity has dropped to a level of about one foot candle. The following morning when the light intensity has risen to about ten foot candles, the light will automatically turn off. This device is sealed in a weatherproof case, only one-and-three-quarters inches in diameter, and of a very shallow depth. The three different models are easily installed in various types of commercial and industrial lighting fixtures.

Let us say that you are a plant safety supervisor and on your periodic inspection tours you notice several areas where the lighting is inadequate for safe movement of personnel. This may be true only in early morning and evening in the winter, or on a rainy day. You could select the proper luminaire for the location and instruct the plant electrician to install it. Without the photo-electronic device the lamp would probably be on most of the time, or else off when it might be needed. With the device, you would be assured that the lamp was on only when needed and off when illumination was adequate. Thus you would conserve electrical energy and prolong the life of the lamp. You would reduce the work of your personnel responsible for lamp group-replacement and eliminate time clock adjustment nuisance.

Fig. 3. On outside lights, photo-electric control switch can be mounted separately near light, as shown in photo.

Fig. 1. On wall fixtures, exemplified by one above, light sensitive switch is inserted in drilled hole at top of bracket.

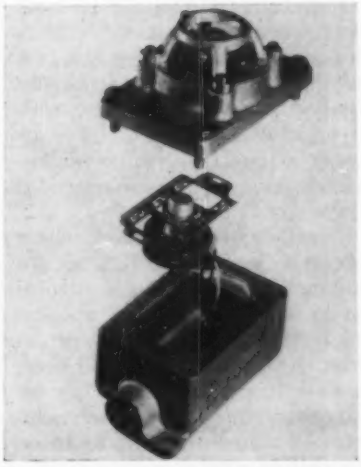


Fig. 4. An explosion-proof type of enclosure for use in mounting automatic switch in varied hazardous locations.

Let us further suppose that the fixture required was outside the office area, where architectural detail is of importance. You might select a commercial-type wall bracket fixture. In many fixtures of this type it would be possible to install the photo-electronic device in the canopy by drilling or punching a hole, as shown in Figure 1. For this kind of installation it is only necessary to be certain that the light from the lamp controlled by the device does not strike the light-sensitive element or photocell. Usually this is not a problem unless there is an overhang or some other part of the building which

reflects the light back into the photocell.

Of course, the device need not be installed in the fixture itself. It could be installed in a switch box located in the area to be lighted. This would be of particular advantage in those traffic areas, where there are several points of entry or exit. Normally this arrangement would require three-way and four-way switches for control of the lighting from all points. All of this expensive wiring is eliminated by the application of the photo-electronic device, as shown in Figure 2. An advantage of this type of installation is that the device can be installed very close to the actual area in which light control is desired.

Help to Safety Engineer

Of great help to the safety engineer, when confronting budget-conscious management, is the fact that the devices can be individually installed over a period of time, with no great expenditure of labor or money at one time, and with immediate savings in relamping and power costs.

Remote lighting in plants, where reflectors and floodlights are mounted on the outside of a building or on poles, are good applications for these photo-electronic devices. If open type wiring is used, as shown in Figure 3, the device may be mounted in a 3 inch octagon box close to the yardlight on the wall or pole.

Device Weatherproof

The device itself is weatherproof, but the case provides support and mechanical protection, and makes it possible to have the light sensitive cell exposed to just the natural light.

In hazardous industrial locations where explosion-proof wiring is required, the photo-electronic device fits into a small and inexpensive explosion-proof pilot light enclosure. A typical one is shown in Figure 4.

To those of us concerned with safety, the automatic features of this device help to eliminate human error and prevent needless accidents.

Industrial Roulette

(from page 12)

tacles should not be made available from tool cribs—the individual facial characteristics of each employee must be taken into account. The annoyance caused by an ill-fitting temple or bridge can assume monumental proportions in an eight-hour workday. Successful eye protection programs always take into account the personalized fitting factor. Moreover, safety eyewear needs to be sterilized, maintained and not borrowed by other workers.

Worn-Out Beefs

No doubt you've heard your share of beefing about the horrors of wearing eye protection. Well, don't get the feeling that it's just you against the world. The complaints can be heard from coast to coast. Roughly, this perpetual parade of complaints boils down into four main categories: "Safety glasses are too heavy"; "Safety glasses will ruin my eyes"; "Street glasses are almost as good as safety glasses"; "Safety glasses are needed for only certain jobs."

"Safety glasses are too heavy." Actual tests prove that many safety glasses weigh less than a necktie. If the stamina of the average industrial employee is so low that he can't bear up under the weight of a necktie, then the country is over the hill.

"Safety glasses will ruin my eyes." Safety lenses are made of optical quality glass or plastic. Whoever ruined his eyes looking through house windows or auto windshields—items that are **not** of optical quality? Further, medical experts on the subject agree that there is no valid scientific evidence whatsoever to support the allegation that wearing safety eyewear will produce eye deterioration. These same experts agree that substandard or improperly fitted lenses may cause annoyance and some discomfort—but **not** disease.

"Street glasses are almost as good as safety glasses." When regular street glasses will withstand the impact of a ⅞" diameter steel ball dropped freely from a height of 50 inches, and the frames are not flammable, and all other ASA requirements are met, then, and only then, can ordinary specs be used in industry. Until that time arrives I will make a flat statement: Street glasses are **not** as good as safety glasses—and should **not** be allowed in any shop area.

The complaint that **"Safety glasses are needed for only certain jobs,"** can be answered by the men best qualified to comment on this classic mis-statement—the workmen who played "Industrial Roulette"—and lost.

"If It Is Worn"

Nothing can be done to help the hundreds of thousands of employees who already have experienced eye injuries, loss of sight or blindness. The job that must be done is to prevent present and future generations of industrial workers from becoming accident statistics. The nearly 19,000 Wise Owl Club members are living proof that safety eyewear will do a job **—if it is worn.**

Eye safety programming rather than just an analysis of eye injury cases is the very heart of this vast and important problem. Much can be learned from eye injury case histories, but the really worth-while lessons have already been learned —but by the wrong people. Very little is gained by workmen—like my father—who needlessly lose an eye during the course of employment.

Projecting Message

The crystal clear message about 100 percent eye safety must be projected, heard and heeded by management, by labor, by medical department personnel, as well as by safety men. Until "blind man's buff" and "Industrial Roulette" are outlawed by facts and positive action, the industry of this nation must admit to itself, and millions of wage earners, and their families as well, that it isn't quite as progressive as it can be.

Occupational workplaces need **not** be a breeding ground for blindness—the preventable plague on industry's house.

Original picture of roulette wheel by George A. Douglas from Philip D. Gendreau. Other two pictures from Bausch & Lomb Optical Co.

Ultrasonic Cleaning of Fragile Parts

Now they're using sound to clean delicate camera parts. During manufacture, the heart of an automatic camera is bathed in hot sudsy water vibrating at a pitch beyond the range of the human ear.

Only an ultrasonic bath will do for the delicate coil assembly of the exposure meter. Other methods might damage hair-fine electrical wire or tiny springs in the mechanism.

Before assembly in the camera, the coil must be washed to make sure the pivot on which it swings is free of chemicals from a previous soldering operation. The coil assembly converts electricity from the camera's light-sensitive photocell to mechanical force that controls the size of the lens opening. It must be completely clean to respond accurately and rapidly to electrical changes.

Ultrasonic cleaners work by "cavitation." In this little-understood phenomenon, "pressure pockets," formed by sound waves traveling at high frequency through the water in the cleaning tank, "implode" against any solid surface in the water, loosening the dirt. A detergent counteracts the acid chemical washed off the coils, and the assemblies are rinsed in another tank.

A typical ultrasonic unit consists of a tank filled with solution, usually water, a source of high frequency electricity, and a transducer. The transducer is a ceramic slab or a laminated combination of metals in a magnetic field, that vibrates when electricity is passed through it.

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The PDC-2½B is the latest addition to the complete line of American LaFrance dry chemical extinguishers. There are 6 sizes to fill your needs, from 2 lb. to 30 lb. Your American LaFrance Representative has the details. Ask him . . . or write us.

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(For details, use Key # P-3 on card on page 1)

Another Injury Checked

Helmet Saves Fireman

At one time, it was difficult to convince men of the Middlebury, Vt., Fire Department of the value of safety helmets. It's not now!

Chief Harold A. Caul credits a Fireman's Hat with saving the life of Fireman Fred C. Oney and changing the department's attitude toward head protection.

Fire had completely destroyed the Middlebury College Playhouse—located in a structure that formerly had been a church. The half-burned belfry—with loose, hanging timbers—was a hazard for firemen and the public. Using a 1¾-pound grapple hook, Fireman Oney and five other firefighters were pulling timbers loose 40 to 50 feet from the ground. One of the hook's prongs straightened—releasing its hold on one of the timbers. Chief Caul said the grapple hook "flew like a shot" toward the men pulling it. Before any of the firemen could dodge, the hook struck Fireman Oney on the left side of his helmet. Force of the blow knocked Fireman Oney to the ground. Fortunately, it only caused the injured fireman a severe headache for a few days.

Convincing Lesson

Chief Caul says: "There is no doubt in my mind that the helmet saved the life of Fireman Oney. Previous to this accident, it had been hard to convince the men, working close to a fire, to wear their helmets for protection. The lesson learned proved the value of the helmets and now they don't need any urging to wear them."

Picture by courtesy of Mine Safety Appliances Co.

Safety Coordinators Elect—

James R. Barrett, Albany, N. Y., has been elected president of the Association of State and Provincial Safety Coordinators. He is chief of the Police and Traffic Safety Bureau of the New York State Division of Safety.

Other officers elected at the annual meeting in Chicago are: Lt. Neil Boyd, safety director, Wyoming Highway Patrol, Cheyenne, first vice president; Robert A. Campbell, coordinator, Illinois Division of Traffic Safety, Springfield, second vice president, and Capt. Robert B. King, head of the Traffic Safety Division, Virginia State Police, Richmond, secretary-treasurer. The officers were elected for one year.

The 63-member Association was organized eight years ago to bring state and provincial safety coordinators and others into close cooperation to further safety programs on international, national, regional, state, and local levels. Members are appointed by their respective governors.

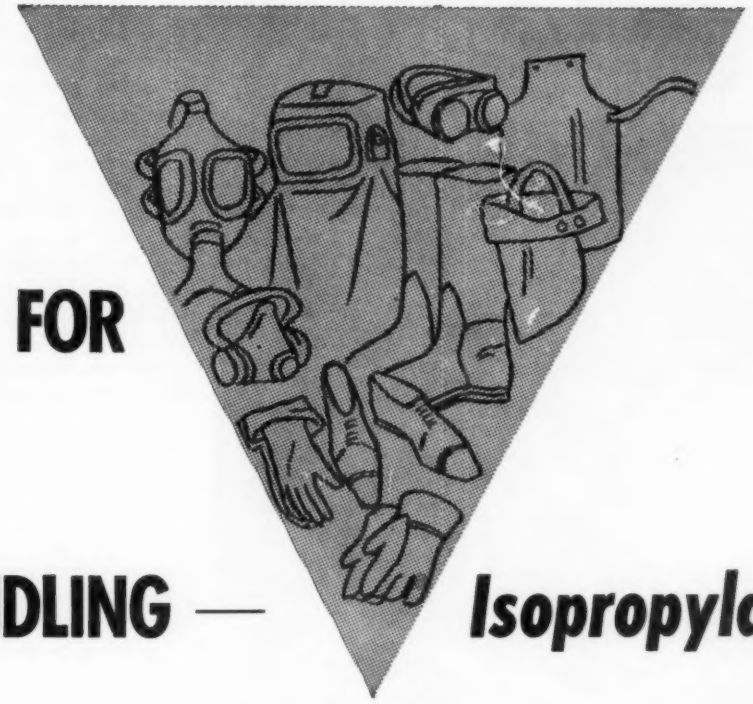
The Association sponsors "Slow Down and Live," annual vacation-period safety program, and state traffic safety management courses. It also participates in the National Vehicle Safety Check Program and "Operation Winter," a research and public information program aimed at promoting winter driving safety.

Executive offices of the Association, formerly at 60 John St., New York City, are now located at Room 816, 1710 H St., N. W., Washington 6, D. C. Emerson H. Westwick is executive secretary.

Supervisors' Safety Course

The Second Annual Supervisors' Safety Training Course has been scheduled for the evenings of March 16, 23 and 30 at the Hillhouse High School in New Haven, Conn. For details about the program and registration, write to: Albert L. Phillips, Executive Director, Greater New Haven Safety Council, 152 Temple St., New Haven 10, Conn.

SAFETY EQUIPMENT FOR HANDLING — Isopropylamine



The correct usage of personal protective equipment in handling isopropylamine requires the education of the worker in proper employment of the equipment available to him. Under conditions which are sufficiently hazardous to require personal protective equipment, its use should be supervised and the type of protective equipment selected should be capable of control over any potential hazard.

The following personal protective equipment should be used when indicated.

Eye Protection

Chemical Safety Goggles: Cup-type or rubber framed goggles, equipped with the approved impact resistant glass or plastic lenses, should be worn whenever there is danger of isopropylamine coming in contact with the eyes. Goggles should be carefully fitted by adjusting the nose piece and head band to ensure maximum protection and comfort.

Spectacle-Type Safety Goggles: Metal or plastic rim safety spectacles with unperforated side shields which can be obtained with prescription safety lenses or suitable all-plastic safety goggles may be used where continuous eye protection is desirable, as in laboratories. These types, however, should not be used where complete eye protection against isopropylamine is needed.

Face Shields: Plastic shields (full length, eight inch minimum) with forehead protection may be worn in addition to chemical safety goggles where greater face protection is desirable. Chemical safety goggles should always be worn as added protection where there is danger of material striking the eyes from underneath or around the sides of the face shield.

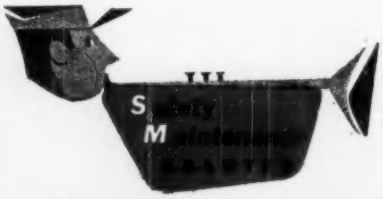
Respiratory Protection

Severe exposure to isopropylamine may occur in tanks during equipment cleaning and repairs, when decontaminating areas following spills, or in case of failure of piping or equipment. Employees who may be subject to such exposures should be provided with proper respiratory protection as described below.

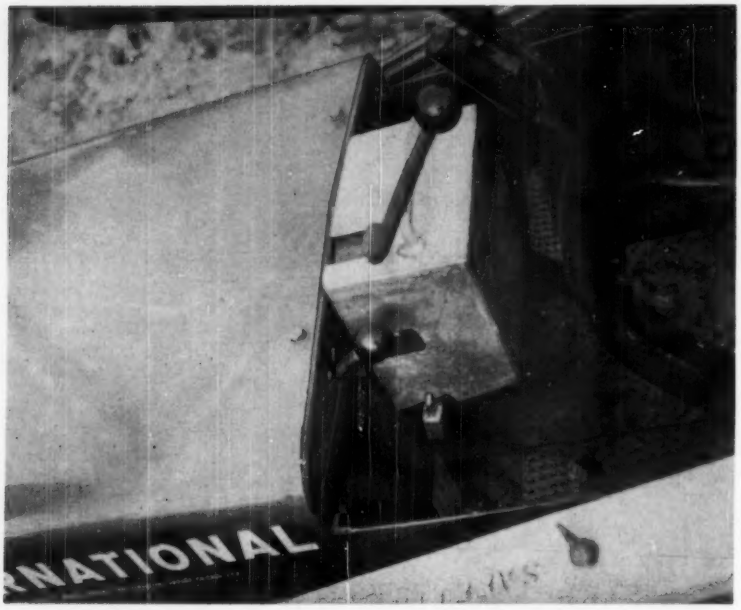
Note: **Respiratory protective equipment must be carefully maintained, inspected, cleaned, and sterilized at regular intervals, and always before use by another person.**

(Continued on next page)

The accompanying material is from "Chemical Safety Data Sheet for Isopropylamine" published by the Manufacturing Chemists' Association, Inc. The complete data sheet, in addition to this information on personal protective equipment and fire fighting, covers the properties, hazards, engineering control, handling and storage, tank and equipment cleaning and repairs, waste disposal, medical management, and first aid. Copies of the complete data sheet (SD-72) are available for 30¢ from: Manufacturing Chemists' Association, Inc., 1825 Connecticut Ave., N. W., Washington 9, D. C.



A SAFETY IDEA



Tractor Lock-Out

This home-made box, fabricated from sheet metal, slips over the starting and ignition controls of this crawler tractor owned by Colfax County, Nebraska. The purpose of the box is to discourage teenagers and other unauthorized persons from attempting to start and operate the tractor when left overnight and week-ends on job.

Picture by courtesy of International Harvester Co.

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a. Self-contained Breathing Apparatus which permits the wearer to carry a supply of oxygen or air compressed in the cylinder, and the self-generating types which produce oxygen chemically, allow for greater mobility. The length of time a self-contained breathing apparatus provides protection varies according to the amount of air or oxygen supply carried. Cylinder (or compressed) oxygen should not be used in tanks or other confined spaces.

b. Positive Pressure Hose Masks supplied by externally lubricated blowers. Since these masks depend on a remote air supply, they should be used only where conditions will permit safe escape in the event of air supply failure. Care must be taken to locate the blower air source in an area which is free of air contaminants.

c. Air-line Masks supplied by plant compressed air are suitable for use only where conditions will permit safe escape in case of failure of the compressed air supply. Such masks should be used only in conjunction with a suitable reducing or demand-type valve, excess pressure relief valve, and filter. The compressed air should be checked frequently to make certain that harmful gases from the decomposition of the lubricating oil used in the compressor, or impure air supply, are not present.

d. Industrial Canister Type Gas Masks, equipped with full face pieces and approved by the U. S. Bureau of Mines, fitted with the proper canister for absorbing isopropylamine vapor, will afford protection against concentrations of isopropylamine not exceeding 2 percent by volume when used in accordance with the manufacturer's instructions. The oxygen content of the air must not be less than 16 percent by volume. The masks should be used for relatively short exposure periods only. They may not be suitable for use in an emergency since, at that time, the actual vapor concentration is unknown and it may be very high. The wearer must be warned to leave the contaminated area immediately on detecting the odor of a harmful vapor; this is an indication that the mask is not functioning or that the vapor concentration is too high.

Note: Where carbon monoxide may be encountered in addition to isopropylamine, the mask should be equipped with an "all-purpose canister" and a "timing device" as approved by the U. S. Bureau of Mines.

e. Chemical Cartridge Respirators may be used to avoid inhaling disagreeable but relatively harmless concentrations of isopropylamine vapor. These respirators, however, are not recommended for protection where toxic quantities of isopropylamine may be encountered.

Head Protection

"Hard" hats should be worn where there is danger from falling objects. If hard hats are not considered necessary, soft-brimmed hats or caps may be worn to give protection against liquid leaks and splashes.

Foot Protection

Rubber safety shoes with built-in steel toe caps are recommended for workers handling drums and cans of isopropylamine. Rubbers should be worn over leather safety shoes. Rubbers should be thoroughly cleaned and ventilated after contamination. Leather shoes should be discarded.

(Continued on the next page)

Body, Skin and Hand Protection

Sustained or intermittent skin contact with liquid isopropylamine will produce burns at the site of contact. Rubber gloves and aprons should be worn when there is possibility of body contact. Protective clothing contaminated by isopropylamine should be flushed with flowing water promptly and cleaned inside and out each time they are used. It is imperative that any non-protective contaminated clothing be removed promptly and laundered before re-use. Affected areas of the body should be washed thoroughly with soap and water. As a general hygienic measure, facilities for personal cleanliness should be provided and washing before lunch and at the end of the work day should be encouraged.

Fire Fighting

While isopropylamine vapors are are heavy and will concentrate in low places, there is ready diffusion into air so that an appreciable volume may be in the middle portion of the explosive range. Considerable caution is indicated in approaching isopropylamine fires and particularly in extinguishment as an explosive mixture may exist immediately following extinguishment and is readily re-ignited.

Carbon dioxide is suitable for small fires in isopropylamine but considerable care should be used to make sure that all surfaces are reduced to a temperature well below the ignition temperature of the material.

Water spray is particularly effective as it will quickly condense and absorb vapor in the air. Considerable quantities of water will be required in order to dilute spilled material below the point at which it will give off flammable vapors.

Self-contained breathing equipment with full face piece is required in fire-fighting operations in order to protect the eyes from irritation from isopropylamine vapors. Ordinarily, fireman's protective clothing should provide adequate protection against skin irritation in normal fire-fighting operations.

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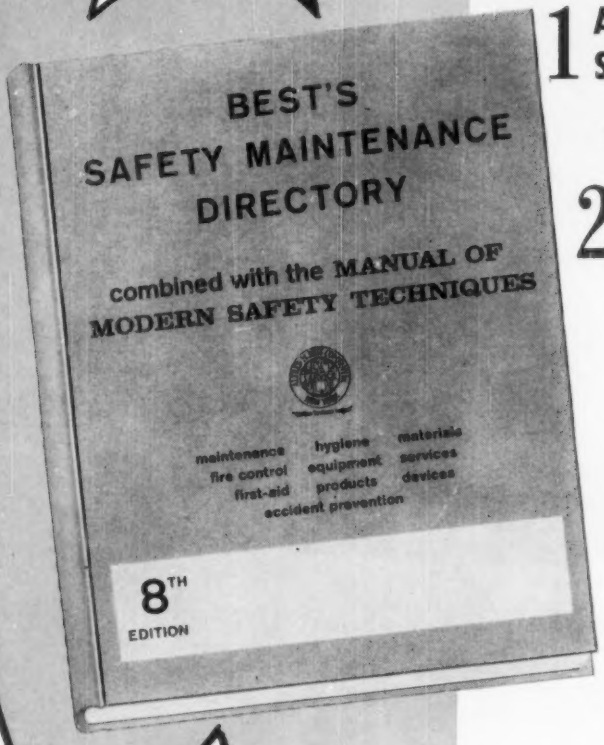

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The Midvale-Heppenstall Company, Philadelphia's largest steel mill, located in the Nicetown section of Philadelphia, has been commended by both the City of Philadelphia and the State of Pennsylvania for its efforts to reduce air pollution in this area.

This is part of the vast improvement program now taking place at Midvale-Heppenstall. The old open hearth furnaces are being replaced with new modern electric furnaces. It was apparent that there would be the generation of large volumes of small diameter dust and fume particles which would become an air pollution matter not only of in-plant comfort, safety, morale and efficiency, but also objectionable to the neighborhood. Thus, it was an early management decision to install the most efficient type of air pollution collectors.

• • •

The Department of the Army Award of Honor for Safety has been presented to Fifth U. S. Army at its headquarters in Chicago next month.

The impressive plaque, top safety award given by the Army, is one of three safety awards recently won by CONARC agencies. First U. S. Army, with headquarters at Governors Island, New York, has been named to receive the Award of Merit for Safety. It is the second highest Army safety award. The Military District of Washington received a Special Award plaque for Sustained Safety Improvement.

• • •

Thirteen employees of the Fruin-Colnon Contracting Company received Outstanding Safety Performance Awards at the company's 87th Anniversary and Awards Banquet in St. Louis. The man with the best safety record in each division of the company received a $100 U. S. Savings Bond. Fifteen employees were honored for service ranging from 10 to 25 years.

• • •

United States Gypsum Company established the best safety record in its history during 1959. Accord to E. C. Beuthin, Manager-Safety, U. S. Gypsum achieved an excellent 1.8 lost-time frequency rating as measured by American Standards Association. Beuthin revealed that 34 of 59 plants enjoyed perfect records, attributing the fine showing to the fact that "more people are giving more attention to safety than ever before."

Although personnel worked 25 million man-hours during the year, no fatalities were reported at the widely-spread operating facilities, and accidents were far fewer than in previous years. The 1959 safety record was a 30 percent improvement over 1958 when the company established an all-time safety record for one month. In May of that year, personnel worked 1,750,000 man-hours without a lost-time injury.

• • •

Monsanto Chemical Company's safety record in 1959 was second only to the all-time record year of 1958. The 1959 accident frequency rate was .73 major injuries per 1,000,000 man-hours worked at the company's 38 locations, compared to the .69 rate in 1958.

Among the Group I locations (those which work more than 1,000,000 man-hours a year), Mound Laboratory at Miamisburg, Ohio, won the President's Trophy for the best safety record during the year. The laboratory operated the entire year—1,619,031 man-hours—without a major injury. It also won the Safety Improvement Plaque in its group for the greatest improvement in injury frequency rate over the last five years.

The President's Trophy for Group II locations (between 200,000 and 1,000,000 man-hours annually) was won by the Dayton (Ohio) Laboratory which had no major injuries in 1959 during its 739,046 man-hours of operations.

The Santa Clara (Calif.) plant in Group III (less than 200,000 man-hours a year) won the President's Trophy in its group for the second consecutive year by operating injury-free during the year. The plant also won the Safety Improvement Plaque in its group.

The company's Executive Committee Award, made to the location in each group which has the best man-hour record since the last major injury, was won by the El Dorado (Ark.) chemical plant in Group I, with 10,904,310 injury-free man-hours in the past 6½ years (This plant holds the company's General Manager's Award for the best plant safety record); the Seattle (Wash.) plant in Group II for operating 2,152,303 man-hours in nine years without a major injury; the Lion Oil Company Division's pipeline department at El Dorado, Ark., in Group III by working 1,115,679 man-hours with no major injuries over the past eight years. The Lion division's production and exploration department was declared the winner of the Group II Safety Improvement Plaque.

• • •

The William G. Leininger Knitting Co., hosiery manufacturer, Mohnton, Pa., has been awarded a certificate of merit by the Pennsylvania Manufacturers' Casualty Insurance Co. for 434,744 man-hours production without a lost time accident. The award was made in recognition of Leininger's safety record achieved during a recent nine-month period.

New Employee Safety

Recovering from a slack period and expanding operations, means hiring new employees or re-hiring those laid off. What do you do for these men "Safety-wise"? Here is your most productive opportunity to get your safety message across to the new workers, warns the Institute of Scrap Iron & Steel, Inc.—but if you miss this moment, you may never really convince them you mean it when you talk safety.

Whatever your hiring procedures may be, you can inject this matter of safety by making use of the following techniques:

1. Before a man is accepted for employment, have him checked over by your company doctor or at a clinic which keeps regular business hours. This pre-employment physical examination will disclose any weaknesses, physical restrictions, and possibly tendencies toward hernia, back ailments, heart trouble, etc. From the examination you can determine the types of jobs this man can do safely—don't put him on a job where an existing condition will be aggravated, or where he might cause injury to himself or others. It has been found that the cost of pre-employment physicals is a good investment against unnecessary or unwarranted injury claims.

2. Before the man is put to work, explain your policy of insisting on every worker using safe work methods, and of your desire to maintain the safest working conditions possible. Be sure to tell him that in case he does receive an injury, he must report it and get treatment at once!

3. Give the man his goggles and hard hat and any other safety equipment you provide. Make certain that he wears safety shoes. Point out why and where such equipment must be worn.

4. Point out the "hazard areas," explaining what his job will be, how to protect himself from hazards, what equipment or tools he is to use, and what he must not use.

5. When you turn him over to his supervisor, make it a point to ask the supervisor to make certain that the man knows the safe way of doing his job before letting the man go on his own.

This is a minimum program of safety indoctrination! In addition you should explain your safety program, have him meet the safety committee, explain the safety suggestion system, show him the safety bulletin board, and whatever other safety features you may have.

Does this pay off? You will find that the time spent with this man on safety in those first few minutes will make an impression that he will remember for a long time. You can make him a safe worker if you make the right start. If this effort can produce a safe worker rather than a casualty, you will agree that the time and effort "paid off."

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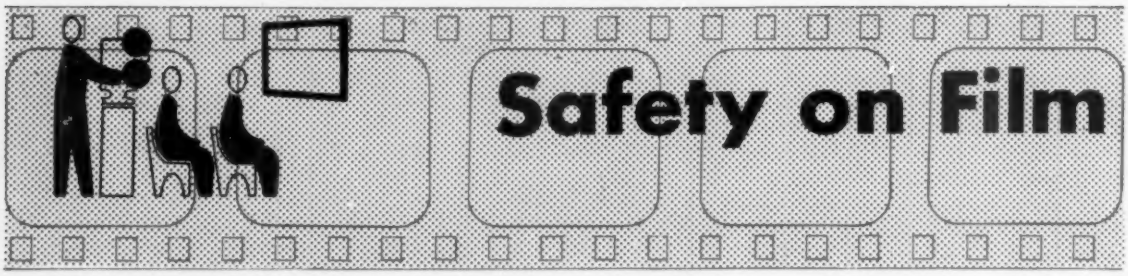

Acoustical Tile Film

A 16mm sound motion picture introducing a new concept in fire-safe acoustical tile ceilings for commercial, institutional and industrial buildings, has been produced by the Armstrong Cork Company and is currently available on a free-loan basis for group showings throughout the country.

The film explains how it is possible to achieve rated fire protection for steel supporting members or metal decks by using a new prefabricated acoustical tile ceiling. The new ceiling not only sound-conditions, but also serves as an efficient fire barrier, requiring no additional fire protection above the ceiling. Also included in the film is a report on recent Underwriters' Laboratories tests which were conducted on the new ceiling to determine its fire-resistant capabilities.

The film, which requires approximately 18 minutes running time, may be obtained for showings by writing to the Armstrong Cork Company, Department I. S., Lancaster, Pennsylvania.

Artificial Respiration Film

A 16 mm motion picture, "That They May Live," is a dramatic training film in the application of artificial respiration techniques. Made by Pyramid Film Producers, Ltd., it shows in an opening laboratory sequence the comparative effectiveness of various methods.

The application of these techniques is then dramatized in a series of simulated emergency situations. In each one, the approach and application of the most efficacious method under the particular circumstances are clearly shown. These scenes include a two-car collision (sternal injury and respiratory obstruction); a capsized boating accident (drowning); a child trapped in an abandoned icebox (suffocation); an infant covered with a plastic bag (suffocation); a case of barbituate poisoning; an electrocution on a pole top; a choking scene (aspiration); and heart attack during exertion and a serious home injury.

The film, in color or black-and-white, is available for purchase from: Pyramid Film Producers Ltd., 7166 Melrose Ave., Hollywood 46, Calif.

"Sorry, Hazlett, we haven't time for your safety suggestion now. Bring it up at our next month's meeting."

Free Technical Films

Specialized motion pictures about new products, advanced industrial processes and cost-saving techniques are listed in a new revised edition of the "Business & Professional Film Catalog" just published by Modern Talking Picture Service. The films are available on free loan to technical groups, universities, business and professional audiences and other groups with specialized interests. Copies of the illustrated catalog are being distributed free.

All films are 16mm-sound, varying from a quarter-hour to a half-hour in length. Subjects include research and development, modern steelmaking, plastics, die-casting, infrared spectroscopy, compressed air power application, forging and grinding techniques and other subjects useful in fields such as architecture, civil engineering, construction, the metal trades, the chemical and petroleum industries.

The films are made available on free loan as a public information service of leading businesses and industries. Modern Talking Picture Service will distribute the motion pictures from libraries in Atlanta, Chicago, Dallas, Los Angeles, New York and San Francisco. Copies of the catalog may be obtained by writing to Modern's headquarters at 3 East 54th Street, New York 22, N. Y.

Fire Barrier Film

An 8-minute sound-and-color film showing Underwriters' Laboratories fire-testing and applications of a new metal-and-glass fire and smoke screen has been made available on a free loan basis to groups with a technical interest in fire protection.

Produced by Overly Manufacturing Company, the 16-millimeter film, "Fire Barriers by Overly," shows actual UL fire tests in progress. It also illustrates how the new screens can be placed in corridors of hospitals, schools and other buildings to provide areas of refuge within the building. The film may be purchased for $65. Further information may be obtained by writing Overly Manufacturing Company, Greensburg, Pa.

Static Electricity

The hazards and control of static electricity on and off the job are dramatically demonstrated in a new 16 mm sound motion picture produced by the American Gas Association's Accident Prevention Committee in cooperation with the U.S. Bureau of Mines. The 22-minute color movie, entitled "Static Electricity," shows the destructive power of static and how it can be controlled in home and industry. A major portion of the movie is based on a series of demonstrations developed by G. M. Kintz and H. F. Browne of the Bureau of Mines. Copies of the new film may be purchased for $200, plus shipping charges, from the Order and Billing Department, American Gas Association, 420 Lexington Ave., New York 17, N. Y.

The unsupervised guard at this Pennsylvania shirt factory quit work early one Sunday morning. A little later, a passerby noticed smoke. Firemen arrived too late to save $680,000 worth of equipment, raw materials, and finished merchandise.

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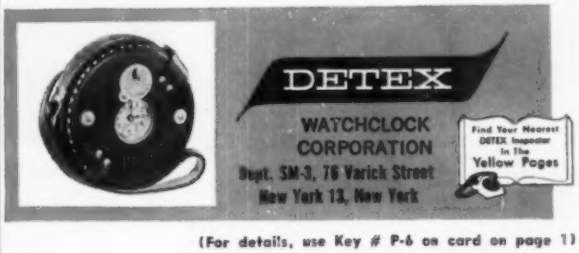
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Rescue Breathing Film

Rescue breathing, promptly and properly applied, would probably save many lives of the approximately 11,000 victims of suffocation who die each year in the United States, according to Anesthesiologists. Official U. S. statistics show that this death toll results from drowning, choking, electric shock, gas asphyxiation, heart attacks, drugs and chest injury, among other causes.

Latest Method

"Rescue Breathing," a new safety film designed to teach the techniques of rescue breathing (mouth-to-mouth or mouth-to-nose) now is available from American Film Producers. The experiments conducted by Dr. James O. Elam, Director of the Department of Anesthesiology, Roswell Park Memorial Institute, Buffalo, New York, form the basis of this film. It was shot in color in order to show the cyanotic blue color of victims of suffocation and the flush pink which brightens the skin upon successful revival. However, black and white prints are available. The completed production has a running time of approximately 21½ minutes, and is being distributed by American Film Producers who edited, added animation and otherwise completed the training film.

Incidents Re-enacted

Photography included re-enactments of experiments utilizing physician volunteers who permitted themselves to be drugged with curare to simulate unconsciousness and inability to breathe. Also re-enacted for the film were emergency situations which dramatized the need for learning the techniques of rescue breathing and showed the simple steps to be followed for successful revival of the victim in each situation. Previews of "Rescue Breathing" may be arranged through: American Film Producers, 1600 Broadway, New York 19, N. Y.

International Competition At IRFAA'S Convention

Two international contests will feature the 13th Annual Convention of the International Rescue and First Aid Association which will be held at the Benjamin Franklin Hotel, Philadelphia, Pa., Nov. 3, 4 and 5, 1960, with the Pennsylvania Association of First Aid and Rescue Squads as host.

The annual International First Aid Contest and a newly-inaugurated International Rescue Contest, workshops and panel discussions of rescue and first aid subjects, and addresses by internationally-known dignitaries will feature the convention program, according to Convention Chairman Frederick Evans, Arnprior, Ontario, Canada. Mr. Evans is Chief Rescue Officer of the Canadian Civil Defence College at Arnprior and Second Vice President of the IRFAA.

Co-Chairmen of the Convention will be Ralph H. Garrabrant, Cedar Grove, N. J., and John D. Gross, Philadelphia, president of the host PAFARS and IRFAA State Director for Pennsylvania.

IRFAA President Conrad H. Kreyling, River Edge, N. J., in announcing appointment of Mr. Evans as Convention Chairman, said that the convention would officially open at 9 a.m. Nov. 3, with a full three-day program.

The convention will feature commercial exhibits of rescue and first aid equipment, ambulances, emergency vehicles, rescue boats with accompanying outboard motors and trailers, and other specialties. Some of the ambulances will be displayed in the lobby of the Benjamin Franklin Hotel.

The workshops and panel discussions will feature the newest developments in rescue and first aid techniques as well as demonstrations and presentations by highly-qualified experts. Medical, fire fighting and law enforcement leaders as well as leaders from related technical and equipment fields are expected to participate in the program.

The convention will be open to all persons interested in rescue and first aid, regardless of membership in the IRFAA. The only requirement is that each must register at the convention.

The International First Aid Contest and the International Rescue Contest likewise will be open to all teams whether or not the sponsoring unit or organization or team members are IRFAA members. However, each member of each competing team must register at the convention to be eligible for competition.

The IRFAA's 1961 convention will be held at Roanoke, Va., and its 1962 convention in Canada with Toronto and Montreal being considered as the convention site.

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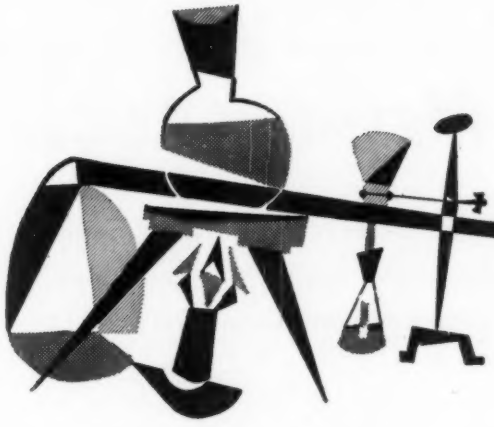


industrial hygiene

Dust Control Equipment Shown

Dust control, plant ventilation systems, air pollution control, and greater safety in foundry operations generally will be a major interest to foundrymen attending the 1960 Castings Congress & Exposition, May 9–13, Philadelphia, reports Wm. W. Maloney, general manager of the sponsoring American Foundrymen's Society, international technical society for metal castings producers.

Aware of the rapidly growing interest in improved safety and in better and more effective foundry air purifying systems today, many major manufacturers of mechanical safety and air control equipment signed up for exhibit space within weeks following initial announcement of the exposition. Developments in air power systems including compressors and components will be another major feature at the 1960 Exposition.

Representatives from well over 90 percent of the foundry capacity in the United States and Canada are expected to attend the national exposition. Key foundry executives admit new developments exhibited in Philadelphia will play a large part in their modernization-expansion planning in all areas, including dust and air control systems.

International Congress On Occupational Health

The 13th International Congress on Occupational Health—first to be held in the Western Hemisphere—will meet in New York City in July, 1960, according to an announcement by Dr. Leo Wade, of New York, who is chairman of the Organizing Committee.

Several thousand physicians, nurses, industrial hygienists and other delegates from more than 40 countries will attend, Dr. Wade said. He is medical director for Esso Standard Oil Company.

"With experts from all over the world gathered in New York to discuss and share important knowledge in the fields of occupational injury and disease," he said, "the 13th Congress will emphasize the fact that the science of health knows no national boundaries."

Theme of the New York meeting will be prevention, rather than cure. Program participants from the many countries will report on their experiences, the findings of both clinical and laboratory research, and on methods for control of occupational health hazards.

Plans already are under way to provide meeting facilities, and for translation services, accommodations for the visitors, and other arrangements.

The congresses are sponsored by the Permanent Committee and International Association on Occupational Health, of which Dr. Sven Forssman, of Stockholm, is president and Dr. Enrico Vigliana, of Milan, is secretary. All previous meetings have been held in Europe, beginning with the first one in Milan in 1906. The 12th Congress was in Helsinki in 1957.

Dr. Wade said the international meetings on occupational health are one means of implementing an objective outlined by the President in his latest State of the Union message.

"A program of science for peace," President Eisenhower said, "might provide a means of funneling into one place the results of research from scientists everywhere, and from there making it available to all parts of the world. There is almost no limit to the human betterment that could result from such cooperation."

As modern industry continuously expands its uses of materials and technological techniques throughout the world, new occupational hazards come into being to take their places beside such old and well-known ones as arsenic, mercury, and lead.

Radioactive materials, for example, are being used to an increasing extent in industry. Findings of research now in being which will be reported at the 13th International Congress on Occupational Health will supplement present knowledge on the control and effects on health of exposures to radiation in industry.

Eye Irritants In Smog

Two chemical compounds have been labeled by the Air Pollution Foundation as the probable eye irritants in West Coast smog.

Formaldehyde and acrolein, the independent Foundation reported, are formed in small amounts in the outdoors atmosphere when sunshine irradiates auto-

(Continued on page 33)

Get the Cleanliness Message Across

If you need something to clean up the indifference of either management or employees to the importance of skin protection facilities and their use, here's how to get help in putting the cleanliness message across.

Cleanliness. Like the weather, lots of people talk about it. Like motherhood, everybody's for it. "It's good clean work" means it's a job worth taking. And it sounds so simple—just keep clean.

But cleanliness is a job and a fight—one of the most important facing industry today. Few other factors affect the health and productivity of the working force so directly. For our major occupational health hazard—dermatitis, or skin irritations, estimated by the U. S. Public Health Service to cost the nation far in excess of $150 million yearly—is largely preventable through the understanding and application of proper industrial cleanliness practices.

Keeping clean on the job is a job itself because it requires effort and vigilance on the part of workers and their supervisors. It's a fight because employee indifference, apathy and ignorance of the consequences of uncleanliness must constantly be overcome.

But the battle has been joined. For the past several years one of the country's largest associations—the Association of American Soap & Glycerine Producers, Inc.—has sponsored an extensive industry-wide educational program on the ways and means of combatting skin troubles.

CAUSES OF OCCUPATIONAL DERMATITIS

Material Exposure	*Number*	*Percent*
Petroleum products and greases	7,805	18.8
Alkalis (and cement)	4,881	11.7
Solvents	3,265	7.8
Plants and woods	2,719	6.5
Metals and metal plating	2,482	6.0
Rubber and its compounds	1,314	3.2
Burns, physical and mechanical agents	1,313	3.2
Chemicals, unspecified	1,253	3.0
Paints, enamels and varnishes	1,132	2.7
Acids and acid fumes	978	2.4
Dyes and dye intermediates	974	2.3
Chromates and chromic acid	727	1.7
Biologic agents	520	1.3
Coal tar products	462	1.1
Furs and fur dyes, and hides	425	1.0
Synthetic resins	390	0.9
Nonmetallic elements	185	0.4
Oils, vegetable (oils, fats and waxes)	92	0.2
All other known exposures	8,064	19.4
Unknown exposures	2,647	6.4
Total	41,628	100.00

Initially, the Association conducted a survey to obtain the latests facts and figures on the dermatitis situation in industry. The questionnaire survey covered 141 plants in major manufacturing areas, comprising some 429,000 employees. Results of the survey showed a problem in need of tackling:

More than a fourth of the workers were exposed to potential skin irritants daily;

Of those exposed at least 9 percent actually contracted some form of skin irritation resulting in lost productive time;

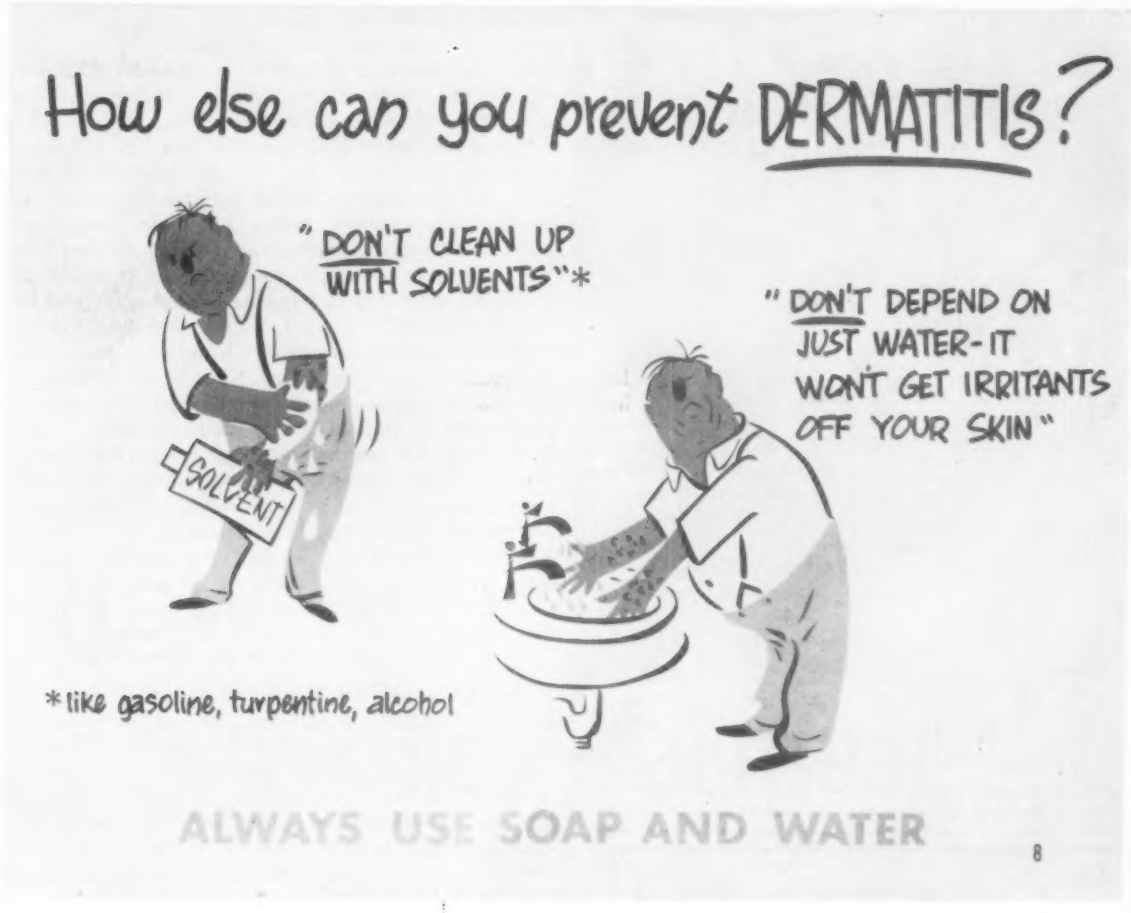
Of 59 companies able to supply actual information on such lost time, the total was 18,219 man-hours in 1955.

There are two aspects to the problem of industrial cleanliness: (1) educate management to the need for providing adequate washing facilities on the job site, and the economics that can be effected by so doing; and (2) impress on employees the need to use these facilities regularly and in the most effective manner.

An authoritative guidebook pinpoints the need for industrial cleanliness. One of the country's most eminent industrial dermatologists, Dr. Louis Schwartz, instigator of the Dermatological Division of the United States Public Health Service, was commissioned to prepare a booklet entitled "The Prevention of Occupational Skin Diseases," of which over 30,000 copies have been distributed to date. The booklet gives a concise yet thorough treatment of the principal causes of occupational dermatitis and the means of its prevention through proper washing-up techniques and the use of protective creams and garments. Not a medical text as such, it is intended for use and reference by industrial physicians, hygienists, nurses, public health officers and others charged with the management and control of dermatitis where it occurs on the job.

Other Sources of Information

Feature articles in various industrial publications have continued to focus additional attention on the subject. These articles are generally of two kinds—over-all "roundup" stories giving the essentials of an effective dermatitis prevention program, and case history success stories illustrating how individual companies in different areas of industry have controlled or eliminated skin troubles on their premises.


How else can you prevent DERMATITIS?
"DON'T CLEAN UP WITH SOLVENTS"*
SOLVENT
"DON'T DEPEND ON JUST WATER-IT WON'T GET IRRITANTS OFF YOUR SKIN"
*like gasoline, turpentine, alcohol
ALWAYS USE SOAP AND WATER
8

As part of the industrial publication program, SAFETY MAINTENANCE has given full coverage to the subject, having run two of the Association's articles entitled "How to Control Dermatitis" (October 1957) and "Choose the Right Skin Cleaner" (April 1958), in addition to material on other aspects of dermatitis, washing facilities and personal hygiene.

Of the case histories, one in particular has attracted considerable attention. Entitled "An End to Diesel Dermatitis," the story centers on the impressive results achieved by three railroads—the Elgin, Joliet & Eastern, the Illinois Central, and the Rock Island—in virtually eliminating a grave dermatitis threat from chromates, coolants and other substances used in operating modern diesel engines. The program undertaken by the roads was the direct result of an "ad damnum" judgment of $150,000, arising from severe outbreaks of dermatitis, rendered against EJ&E in the late forties—one of the largest sums ever awarded by the courts in connection with any occupational personal injury claim.

The railroads' problem, in fact, was so severe at that time that most of the major lines called a special conference in Chicago in 1951 to discuss the subject "Occupational Dermatitis Among Railroad Workers." The speaker was Dr. Schwartz, who analyzed the causes of the trouble and presented a preventive program designed to overcome it. He subsequently investigated personally the facilities at EJ&E, and recommended a major overhauling and improvement of the road's cleanliness facilities, an operation which soon resulted in "an end to diesel dermatitis."

SKIN PROTECTION SERIES
Other articles FEBRUARY & APRIL

Others Follow Suit

Other railroads soon followed suit, and it is now generally agreed that the problem has been solved for the industry. The Soap Association's article outlining Dr. Schwartz's railroad program appeared initially in "*Modern Railroads*," and was subsequently reprinted in its entirety in The Bulletin, official publication of the General Claims Division of the Association of American Railroads. Its unbiased treatment of a somewhat controversial subject caught their labor's eye, and the story again was reprinted in the Brotherhood of Locomotive Firemen and Enginemen's Magazine.

Other case histories have covered the fields of chemical production. At E. I. DuPont in Wilmington and American Cyanamid Company in Bound Brook, New Jersey, where strict personal and environmental

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cleanliness programs are a standard part of company policy; electrical machinery components manufacture at General Electric in Schenectady, where the new epoxy resins, much used as laminating and insulating agents were causing considerable dermatitis trouble until special washup facilities were installed and some operations even physically isolated from others; and small tool machining at Whitney Chain Company in Hartford, Connecticut, where extensive use of potentially dermatitis-producing cutting oils required the installation of vast suction-exhaust duct systems to remove the oil spray from the air before skin irritation could arise.

Object of all the case studies is to demonstrate how proper cleanliness procedures, specifically tailored to the production situations encountered, can pay off handsomely in the control of costly dermatitis cases. They offer concrete evidence to refute the all-too-often encountered complaint from industrial management that "cleanliness costs too much," by demonstrating with facts and figures that over a period of time it's actually one of the cheapest commodities industry can buy.

Visual Aids For Employee Education

Visual aids designed to reach the worker directly with the cleanliness message are also available to industrial health and safety departments. Approximately four times a year the Association releases to industrial house organ editors, doctors, nurses, hygienists and other interested parties a series of brief cartoon strips entitled "Suds 'N' Duds." Without attempting any story-line continuity, the strips feature the adventures of Charlie Clean and the misadventures of Don Dirty in varying on-the-job situations. As their names imply, Charlie has learned to keep himself clean, while the incorrigible Don never learns his lesson and invariably finds himself facing the doctor with a bad case of dermatitis.

Subject areas covered so far in the series include:

Cleaning with solvents
Showering after work
Guarding against new irritants
Waterless skin cleaners
Cleaning with just plain water
Washing-up techniques
Using clean work clothing
Cleaning of office areas
Sanitation maintenance of washroom and cafeteria
Use of protective creams
Necessity for constant skin cleaning
Use of Soap Association Flipchart
Failure to report dermatitis to doctor immediately
Effects of absenteeism due to dermatitis
Use of protective gloves

The strips are suitable for use in various ways, as a regular feature of the company house organ, as poster material in work areas or washrooms, or on bulletin boards. They are gaining wider and wider acceptance throughout industry as an effective, humorous, and non-irritating source of education in cleanliness.

(Continued on page 32)

Company A

At the Newport News Shipbuilding and Dry Dock Company, lead is being used extensively for shielding purposes in the construction of the nuclear-powered submarines "Robert E. Lee" and "Shark" and the first nuclear-powered aircraft carrier, "USS Enterprise." In the picture at right, a "lead burner" is shown using a cut-off saw on a lead slab. To protect him from lead fumes and dust released during the beveling operation, the "burner" is wearing an appropriate respirator. The lead-shielding program at Newport News required revolutionary departures in shipbuilding techniques, involving a basic research study, development of production and testing equipment, and training of technicians.

HOW TWO COMPANIES CONTROL LEAD POISONING

Company B

According to Dr. C. T. Rusin, Medical Director of The American Crucible Products Co., Lorain, Ohio, the high lead content of many of the metals, and many pourings per day of such metals in the company's foundry, necessitated a vigorous program of employee protection, part of which involves surveillance and screening of employees by the medical department.

First, the medical department completed a rigid physical exam of all personnel employed in the foundry. Each employee had a blood lead determination to render a base line or standard for future determinations. Included in the over-all progam of lead control was the construction of a dining hall completely isolated from any lead hazard. The locker and shower rooms were renovated. Basic changes in lead fume and dust control were instituted. A foundry cleaning program was included. These were a part of the total changes felt necessary to do the job properly. Finally, air lead determination was made to evaluate still existing potentially dangerous areas where the air lead content might be excessive. It was found that dust and fume respirators would be an added safety factor in the furnace room and the "shake out" area.

Knowing the antagonism of the average worker to a respirator, it was felt a series of orientation talks concerning the lead hazard would be beneficial to employees. Accordingly, a series of lectures were arranged and subjects included the danger signals of plumbism, simple descriptions of the body's reaction to excessive lead, and the changes instituted at American Crucible for employee protection. The talks ended with the ways and means each individual could protect himself and his fellow workers. It was emphatically stated that if each individual took the proper precautions there would be no need to show any concern about any lead hazard. Incidentally, each autumn a refresher talk is given to the men concerning this problem.

At the present time the medical department utilizes the corporaporphyrin study of urine samples to aid in rapid spot checking of employees. This is done with the full realization of the limitations of this test. These tests are made two to three times per month and more often in the case of employees working in suspected, dangerously contaminated areas. A careful study of the working habits and an examination of the working area is made for any employee who is suspected of in-

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halation of more than the ordinary amounts of lead. Additionally, each employee is given a periodic examination.

Dr. Rusin has been responsible for the company's medical program since 1950, and since that time no known cases of lead poisoning have occurred. Because the rate of turnover of employees is very low, Dr. Rusin has become well acquainted with each one. It is possible, therefore, for him to note even minor physical changes or personality differences which might be a clue to excess lead poisoning.

Material on the American Crucible Products Co. by courtesy of the Industrial Commission of Ohio's "Monitor." Picture by courtesy of Mine Safety Appliances Co.

Get Cleanliness Message Across

(from page 30)

Safety Meeting Material

To amplify and expand the message of the cartoon series, an easel-type flipchart called "How We Can Clean Up Dermatitis" has been produced by the association. The chart is intended for use by foremen, industrial doctors, nurses, hygienists or other supervisory personnel in giving on-the-job safety talks. Topics covered in the pages of the chart include: why take care of your skin, what can happen if you don't take care, how dermatitis can make you look and feel, what can cause dermatitis, means of preventing it through proper washing procedures and use of protective creams and clothing, and ways in which everybody on the job can help each other stop skin troubles.

Received Wide Acclaim

Illustrations are cartoon-style, in four colors and the copy is brief and to the point. With the chart comes an outline to guide the speaker in giving the talk. The chart measures 15" x 17" with spiral binding and comes in a self-contained shipping carton. It has received widespread editorial acclaim in most of the major industrial publications, as well as a warm reception from industry itself.

Materials Available On Request

The Soap Association provides reprints of any of the case histories and other feature articles, and of the "Suds 'N' Duds" cartoon strips, free of charge on direct request to its offices at 295 Madison Avenue, New York 17, N. Y. The flipchart is available at cost—$10 per copy—and the booklet "The Prevention of Occupational Skin Diseases" at 50c. They're all part of a packaged educational program designed to bring the cleanliness message home to management and employees alike, in a concerted effort to eliminate the #1 health problem facing industry today.

Picture from the Flipchart produced by the Association of American Soap & Glycerine Producers, Inc.

Eye Irritants in Smog
(from page 27)

mobile exhaust, and both of these aldehydes have been shown in recent laboratory work to produce the eye irritation characteristic of photochemical smog.

Formaldehyde is a colorless gas. It is produced commercially for use as a preservative (but not for foods), and for use in antiseptics, deodorizers, and manufacture of synthetic resins and certain plastics. It is an irritant, with a pungent, penetrating odor.

Acrolein is a yellow or colorless liquid, with a disagreeable, choking odor, and was used in gas warfare in World War I as a toxic lacrimator. It is used industrially in the manufacture of artificial resins and synthetic perfumes.

Both compounds, the Foundation emphasized, are formed from the action of sunlight on olefinic hydrocarbons in the atmosphere. At least 95 percent of the olefins found in the air come from motor vehicles.

The Foundation announced its latest findings in a new technical report, No. 29 in a series, titled "Photo-oxidation of Hydrocarbons." In a covering letter to trustees and contributors of the privately-supported research organization, Dr. W. L. Faith, managing director, explained:

The report covered a year's work in the Foundation's continuing investigation of auto exhaust in its smog chamber at the Stanford Research Institute facility in South Pasadena.

Earlier Foundation work established that certain olefins, rather than all hydrocarbons, were responsible in combination with nitrogen oxides and sunlight for smog—and that these olefins are formed by the internal combustion process in a motor vehicle engine, even when the gasoline that is burned contains no olefins to begin with. The Foundation has contended that successful elimination of either the olefins or the nitrogen oxides from auto exhaust will end smog.

Noise Abatement Awards

Memphis, Tenn., Philadelphia, Pa., Cincinnati, Ohio and Jacksonville, Fla. were announced recently as recipients of awards from the National Noise Abatement Council for outstanding effort in combatting excessive noise during 1959. Memphis and Philadelphia were given bronze plaques, the highest award given by the Council to cities, and Cincinnati and Jacksonville were granted "Certificates of Award."

The plaques and certificates are given annually on the basis of effective observance of Noise Abatement Week, which the Council sponsors, and on documented evidence of a year-round noise control effort by the city.

The Council, a non-profit organization formed in 1941, also gives industrial awards to firms effectively contributing to noise abatement through the development of quiet products. It disseminates information on methods for dealing with excessive noise and aids in the formation of local noise abatement groups. National Noise Abatement Week in 1960 will be held from April 3 through 9.

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Iron & Steel Scrap

A proposed revision of Simplified Practice Recommendation R58-36 "Classification of Iron and Steel Scrap" is now being circulated by the Commodity Standards Division, U. S. Department of Commerce to sources of iron and steel scrap, processors, and users, for their approval.

The revision was requested by the Institute of Scrap Iron and Steel Inc. to modernize the classification of such material and reflect present practices in the industry. It reduces the number of grades of scrap to four, comprising 40 classifications. Certain of the classifications are new, including two under the basic open hearth and blast furnace grade which recognize that the large hydraulic presses now used in scrap yards bundle complete automobiles and, therefore, include both heavy and light grades of steel. The revision also defines the desired cleanness of the scrap, as well as off-grade material and residual alloys.

Copies of the proposed revision are available on request from the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

Titanium Standard

The growing use of combustible metals has resulted in an NFPA standard on the fire and explosion hazards associated with the production, processing and storage of titanium. Basing its information and recommendations on present knowledge of the characteristics of the metal and processes, the standard urges caution in adopting any untried methods. Past experience with other combustible metals, it states, indicates that hazards may develop as changes are made in handling or processing procedures.

The standard was adopted by the National Fire Protection Association on recommendation of the NFPA Committee on Combustible Metals. Copies of the NFPA standard on the production, processing, handling, and storage of titanium, NFPA No. 481 (32 pages, 50 cents) may be obtained from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

Vinyl Weatherstrip

Proposed specifications for vinyl plastic weatherstrip are given in a Recommended Commercial Standard recently presented to the industry by the Commodity Standards Division, Office of Technical Services, Business and Defense Services Administration, U. S. Department of Commerce, for consideration.

The standard establishes three grades of vinyl plastic weatherstrip according to hardness values. Physical properties are given, together with test methods for determining hardness, tensile strength, and other significant characteristics for each grade. The weatherstrip is used in metal windows, doors, and curtain walls. The material is a vinyl plastic formulated in the colors normally used in the industry. The standard was requested by the Plastic Weatherstrip Manufacturers Division of The Society of the Plastics Industry, and after sufficient endorsements are received from other industry organizations, it will be published as a voluntary standard of the trade.

Copies of the standard, entitled "Recommended Commercial Standard for Vinyl Plastic Weatherstrip," TS-5470, are available on request from the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

Medical Gas Systems

Revisions in the NFPA standard for Non-flammable Medical Gas Systems have been issued by the National Fire Protection Association. The recommendations, available in pamphlet form, particularly make extensive changes in the section on bulk oxygen systems. Increased use of oxygen for medical purposes led the Association to develop a standard for non-flammable medical gas systems. The text on bulk oxygen systems applies to equipment having more than 12,000 cubic feet of oxygen connected in service or ready for service, or systems having more than 25,000 cubic feet of oxygen including unconnected reserves on hand. Also revised are the valving and piping requirements for oxygen and nitrous oxide gas systems. A helpful sketch, showing the recommended layout of such systems on a schematic basis, is included.

Copies of the standard for Non-flammable Medical Gas Systems (NFPA No. 565, 20 pages, 50 cents) may be obtained from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

Fire Department Code for Non-Urban Areas

A comprehensive plan and organization for volunteer fire departments in rural areas and small communities is covered in a pamphlet issued by the National Fire Protection Association. The pamphlet provides a guide for the organization, personnel and duties of volunteer fire departments. Detailed recommendations on equipment and housing for these departments are also spelled out.

Included is a model ordinance for the organization of a volunteer fire department, as well as a summary of typical state legislation for fire department organization.

Copies of Standards on Volunteer Fire Departments (NFPA No. 192, 68 pages, $1.00) may be obtained from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

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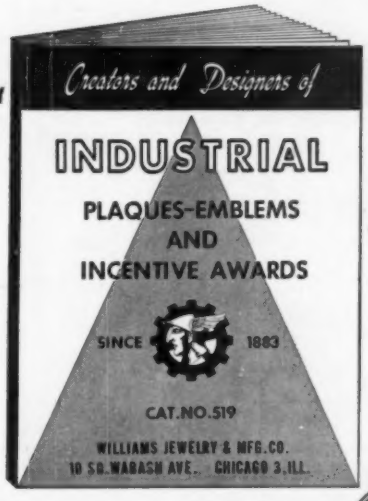

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Incinerator Standard

Important changes in the design, construction and installation of incinerators are covered in a standard issued by the National Fire Protection Association and prepared by the NFPA Committee on Chimneys and Heating Equipment. Material on clearances, mounting and flue connections are among the changes included in the new standard, which applies to domestic and apartment house as well as commercial and industrial type incinerators. Copies of the standard on incinerators, NFPA No. 82 (24 pages, 50 cents) may be obtained from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

Welding Nuclear Piping

The first national publication on welding ferrous materials for nuclear power piping operations has been published by the American Welding Society. The 20 page report was compiled by nuclear power experts and represents their combined knowledge of the best methods and procedures to be used in this new industry. An AWS Committee spent two years examining methods and practices and sifting information from nuclear power engineers before compiling the report. The result is a publication which reflects the thinking and experience of technical men closely concerned with the welding of nuclear power piping.

The material includes: welding procedures, detailed sketches of operations, joint design—angles & dimensions, quality control, qualification of procedures, qualification of welders, and inspection methods.

This hitherto unpublished material will prove of value to everyone concerned with nuclear power operations. It is short, concise, completely up-to-date and is the experience of men who have learned by trial and error the best methods to use. Copies may be obtained from the American Welding Society, Dept. T., 33 West 39th Street, New York 13, N.Y. Price $1.50 per copy.

Motor Fire Apparatus

Important changes in specifications for motor fire apparatus are covered in NFPA Standard No. 19 issued by the National Fire Protection Association. Of particular interest to fire chiefs and municipal officials concerned with the purchase of fire apparatus is a section on aerial ladders. It makes recommendation on the operating mechanism, aerial ladder equipment, control devices, the chassis and structural strength as well as operation tests. Other sections of the standard detail the requirements for apparatus and equipment to be used by municipal fire departments. A new appendix gives the "reason why" for many of the provisions in the specification.

Copies of Specifications for Motor Fire Apparatus (NFPA No. 19, 64 pages, 60¢) are available from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

Edited by HENRY M. GROSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey American Bar Ass'n, New Jersey Bar Ass'n, Chairman, Committee on Workmen's Compensation, New Jersey Bar Association National Federation Insurance Counsel Past Commander, American Legion, Post 10, ... Newark, N. J.

OCCUPATIONAL DISEASE—Emphysema—Pulmonary Tuberculosis—Causal Connection To Occupation

The board erred in finding that the claimant's emphysema was an occupational disease which had been aggravated by exposure to exhaust and paint fumes. The claimant was employed in 1948 as a general manager, and his work involved dispatching taxi drivers, collecting their cash receipts, and keeping records. From 1948 to 1956 he worked in offices which were located in the garages where the taxis were repaired and painted, and as a result, the claimant was exposed to exhaust and paint fumes. The claimant's condition was diagnosed as emphysema, chronic upper respiratory infection and pulmonary tuberculosis. Medical testimony indicated that the emphysema, which was of long standing, had been aggravated by the exposure to noxious fumes. The court held that a finding of occupational disease could not be upheld because there was no proof which related the disease to the occupation generally or which demonstrated that the disease was a hazard to which all employees in the same kind of employment were exposed. Reversed and claim dismissed.

Ashley v. Mardon Operating Corp.; New York Supreme Court, Appellate Division, Third Judicial Department. No. 1812. November 13, 1959.

PRE-EXISTING HEART CONDITION—Strain and Exertion—Accident not Proved

The board erred in finding that the decedent was subjected to unusual strain and exertion due to strong winds and cold while making a delivery and which caused an acute coronary insufficiency. The decedent, about 68 years old and a messenger, suffered from a pre-existing heart condition and used nitroglycerine. On the day in question, he took a subway and carried a brief case weighing about four to six pounds. He made his delivery, received a receipt for it, and started from the bank when he slumped over dead. He was pushing a door which was made more difficult because of the wind blowing outside. The court held that an accident was not coronary occlusion or thrombosis but coronary insufficiency which does not imply any new heart injury. Such condition is due to the gradual progression of coronary arteriosclerosis. The court ruled that there was no accident but that the decedent's death was caused from the ordinary wear and tear of life. There was no evidence that the work which he was doing was any different from that of any other day. Reversed and claim dismissed.

Goldman v. White; New York Supreme Court, Appellate Division, Third Judicial Department. No. 1666. November 13, 1959.

PRE-EXISTING MENTAL CONDITION—Aggravation—Paranoid Schizophrenia

An occurrence, which arose out of and in the course of the employment and in which there was no physical injury but which caused psychological trauma aggravating a dormant repressed schizophrenia, resulting in mental disability, was not compensable under the provisions of the compensation law. The claimant, a taxi driver, was involved in an automobile accident when a pedestrian darted in front of and came in contact with his cab. The claimant suffered no physical injuries. The board found that he became emotionally disturbed as the result of questions by the police and that due to the emotional episode and psychological trauma he sustained an exaggeration of a pre-existing emotional disorder which resulted in schizophrenia, paranoid type. The court held that compensation was not payable for a mental injury precipitated by a mental cause. The court ruled that purely excessive emotions—anger, grief or other mental feelings—unaccompanied by physical force or exertion cannot be the basis of an accident. Reversed and claim dismissed.

Chernin v. Progress Service Co., Inc.; New York Supreme Court, Appellate Division, Third Judicial Department. No. 1434. November 13, 1959.

Insurance Leaders in Prominent Roles At President's Conference on Occupational Safety

The major contribution of the insurance industry to the safety of the American worker is illustrated by the participation of leaders of that industry in the President's Conference on Occupational Safety, meeting in Washington March 1, 2, and 3.

Their services included actual program participation in several of the nine Workshops on specific phases of "The Challenge of Safety in a Changing World," the theme of the 1960 President's Conference. Other representatives of the industry served as consultants to Workshops, or as members of the Technical Advisory Committee, and the Program Planning Committee of the Conference.

Merwin Brandon, President, Underwriters Laboratories, Chicago, was a member of a panel discussing "Setting Safety Standards for Tomorrow's Materials."

Charles R. Williams, Assistant Vice-President, Liberty Mutual Insurance Company of Boston, talked on "Radiation: Friend or Foe?"

Frank E. Laderer, Director of Safety, Nationwide Insurance Company, Cleveland, appeared on the Panel in the Workshop titled "The Challenge to Schools for Safety in a Changing World."

Grace Bissonnette, R.N., industrial health consultant to the Lumbermen's Mutual Casualty Company, of Boston, was a consultant to the Workshop on "Health Maintenance—Its Contribution To Job Safety."

Leaders from labor, industry, government, education and science took part in five other Workshops, their subjects including "New Emphases In Training," "Little Known Facts About Injury Occurrence," "Wanted!—Leaders for Safety," "Communication—A Bridge For Safety," and "Why, and How To, Investigate Accidents."

The Technical Advisory and Program Planning Committees for the Conference include two representatives of the insurance industry, in addition to Miss Bissonnette. They are J. C. Stennett, Manager, Accident and Fire Prevention Department, National Association of Mutual Casualty Companies, and Robert Hagopian, Assistant Manager, Accident Prevention Department, Association of Casualty and Surety Companies.

Lyons to Speak at Washington A. S. S. E.

The Honorable Eugene J. Lyons, Special Assistant to President Eisenhower, for Personnel Management, will be the principal speaker at a special meeting being held in Washington, D. C., on Wednesday evening, March 2nd, jointly sponsored by the Washington Chapter of the American Society of Safety Engineers and the Federal Safety Council. This meeting, held during the President's Conference on Occupational Safety, March 1–3, is a traditional event which has been held by the local ASSE chapter since the first President's Conference in 1946.

This year the Washington ASSE Chapter invited the Federal Safety Council to co-sponsor the special event. The national officers and members of both organizations who will be in Washington to participate in the President's Conference will attend the meeting.

"SM" Editor Addresses Two Safety Meetings

Harry Armand, Editor of "Safety Maintenance," was the principal speaker on February 1st at the opening session of the 1960 series of meetings on "Accident Prevention for Supervisors and Foremen" sponsored by the Industrial Committee of the Newark, N. J., Safety Council. Mr. Armand outlined to his audience "The 3 D's of Accidents—Day-dreaming, Dangers and Disabilities."

He is also the guest speaker and panel moderator at the Small Manufacturing Session on March 10th at the 26th Annual Regional Safety Conference, sponsored by the Safety Council, Chamber of Commerce of Greater Philadelphia. The panel meeting will be devoted to Safety in "Stowing and Handling Materials."

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Maintenance Show

(from page 8)

ing both; 4. Be realistic about demands for "Rush" purchases; 5. Be open-minded about new products, new vendors, new contractors.

***"Data Processing Equipment In Maintenance Work"*: James W. Cherol, Manager, Plant Engineering & Maintenance, General Electric Co., Home Laundry Dept., Louisville, Ky.**

About six years ago, we initiated a Systems Development program; and a large scale electronic computor was installed about the same time. In maintenance, our procedures system is designed to control two factors: labor and materials.

The data that goes into the computor includes: 1. labor vouchers, showing employee's shift, section where he worked, code for the work done, machine worked on, and type of maintenance; 2. crib receipts—code and quantity of material received at tool crib; 3. crib withdrawals; 4. material returned; 5. price changes, new inventory items and inventory cancellations.

Among the maintenance reports we receive from the computor are: 1. monthly expense reports; 2. monthly inventory analysis; 3. weekly material reorder reports; 4. monthly material receipts report; 5. material price quotation report; 6. weekly material transaction error report.

***"What the Plant Engineer Should Know About Building Design and Construction"*: Clifford S. Strike, President, F. H. McGraw & Co., Hartford, Conn.**

In the construction of new plants or the expansion of old ones, the plant engineer must be familiar with the properties of the latest types of building materials and how they affect and relate to the peculiarity of operation in his plant. He should also know about construction techniques and have a voice in the installation of equipment and in such important features as aisle space, mechanical equipment, materials, handling, etc.

Only through complete teamwork between the plant engineering department and a reliable industrial contractor can a company achieve: 1. The best balance between fixed investment and operating costs; 2. Flexibility in equipment layout; 3. Fast, integrated materials handling; 4. Low cost maintenance; 5. Economical provisions for future expansions; and 6. An operationally efficient plant completed on schedule within the budget established.

***"Plant Engineering In Planning to Combat Disaster By Flood"*: John Bayuk, Plant Engineer, Lycoming Div., Avco Corp., Stratford, Conn.**

The river floods that hit Connecticut in 1955 gave our flood control system a real test under the worst flood conditions. While hundreds of plants were flooded, our plant escaped unharmed. We credit our flood control system for this achievement. The system consists of an earth dyke, flood control pump stations, and an emergency organization that takes over when the plant is in danger of a flood and is evacuated. The cost of the dike and pump stations amounted to $205,000, which is only a fraction of 1% of the net worth of the plant and equipment.

***"Plant Engineering In Planning to Combat Disaster By Tornado"*: Francis J. Burgoyne, Chief Layout & Construction Engineer, Norton Co., Worcester, Mass.**

Tornadoes may occur anywhere in the country. The one which struck central Massachusetts in June, 1953, severely damaged our company's new Machine Division plant, portions of the main Abrasive Plants as well as employees' homes in residential areas. Some of the problems raised by this unexpected disaster were handled in this order: 1. The Injured—only eight who were treated at our plant hospital; 2. Utility Hazards—our maintenance department dealt with electrical, gas and water control in minutes; 3. Fire Danger—our fire department handled this with hose and extinguishers; 4. Communications—field telephones and two-way radios were used; 5. Sightseers —volunteer guards helped our regular guards control this problem; 6. Cleaning Trees & Debris from Roads—underway within an hour; 7. Machine Protection—when work crews could be mustered, they cleaned, slushed and covered machine tools and equipment for protection.

The lessons we learned from this tornado include: 1. Have an emergency organization chart, with authority delegated and alternates from different geographical areas; 2. Communications—tie in with the Weather Bureau's tornado warning service, maintain liaison with local Civil Defense, provide for two-way radio at your plant; 3. Mutual Aid Program—develop a central pool plan with other companies for equipment, materials and manpower; 4. Emergency Equipment —we have several emergency trailers at various locations with rescue and first aid equipment, to be used only for disasters such as fire, flood, tornado or explosion; and other emergency equipment is provided for departments likely to use it for other occasions; 5. Pass System—work one out with local police, Civil Defense, State Police, and National Guard so that necessary personnel can get to the plant; 6. Building Construction—for long-term planning, bear in mind that monolithic concrete stands up well, as does well-designed steel frame even though roofs and sides may be severely damaged; 7. Roof Anchoring—on the outskirts of a tornado, roofs can be kept in place by fastening them with metal straps to side walls and columns.

***"How to Plan & Schedule Maintenance Work For Effective Control"*: Charles H. Walmann, Senior Systems Engineer, American Smelting & Refining Co., New York.**

For some time it was felt that improvements could be made in better planning and scheduling, more consistent methods of assigning priorities to jobs, and more systematic estimates of manpower and material requirements. The results of a survey showed that maintenance was not on a planned and scheduled basis, 19 different work request and order forms were used, up to seven types of rush and emergency priorities were in existence, work was not performed in order of importance, cost records were poor, advance planning was lacking.

A complete maintenance control program was instituted consisting of six major phases: 1. Develop and install administrative controls (listing of routine jobs and work order

system); 2. Develop procedures for controlling and scheduling manpower, equipment and materials; 3. Develop a system of recordkeeping for filing, compiling and tabulating data for cost control, improved preventive maintenance, manpower and equipment requirements, budget detail, and improved maintenance methods and techniques; 4. Develop standards; 5. Develop a system of materials control; 6. Develop a system of reports to various levels of management to indicate the status of the maintenance activity.

***"Getting At the True Maintenance Costs For Purposes of Comparison"*: Harry Monroe, General Foreman of Maintenance, Rocketdyne Div., North American Aviation, Inc., Canoga Park, Calif.**

Before comparative costs can be submitted, it is necessary to establish the frequencies of the varied maintenance efforts. We classify according to Long Term Maintenance, Preventive Maintenance, and Emergency Maintenance. Each type of industrial plant will have its own specific problems, but several areas of classification are common to all:

Long Term Maintenance: roofing repairs, roadway repairs, machinery rehabilitation, motorized vehicle replacement, internal flooring replacement, piping, erosion, relining of boilers, tank coatings, relamping, furniture replacement, painting, office equipment replacement, and materials handling equipment.

Preventive Maintenance: minor building repairs, machinery and switch gear inspection and repair, proof-loading of materials handling equipment, minor repairs of motorized vehicles, pipe lines carrying hazardous materials, electric motor inspection, cooling system inspection.

***"Our Methods of Maintenance Control"*: R. C. Woodbury, Assistant Manager of Maintenance, Dow Chemical Co., Midland, Mich.**

Both long-range and short-range planning are necessary to control maintenance intelligently. Each year a forecast of maintenance needs is made up and from this a maintenance budget for each department.

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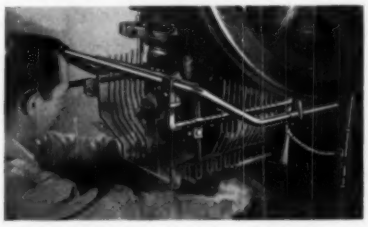

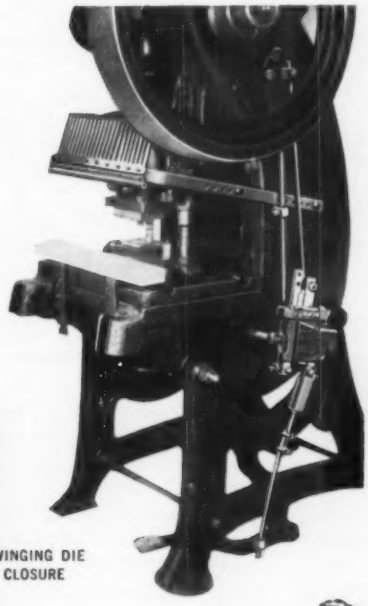

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Another major control unit is the work order system. Each order tells what the job is, where, account number, date required, safety hazards, estimated cost, and maintenance classification. A third major control item is the motor load index.

Control units for specific areas include: preventive maintenance, manpower availability, overtime, and safety.

***"Maintenance Stores Control"*: Elmer D. Gates, Manager, Facilities, Defense Systems Dept., General Electric Co., Syracuse, N. Y.**

In Syracuse our company occupies eight buildings at seven locations, each thirty minutes driving time apart. Our maintenance problem is one of providing effective, timely service at each of these scattered locations at a minimum of cost and delay. After the first six months of operation of our Facilities Maintenance & Service Dept., we found we constantly had too big a back-log of routine maintenance jobs. We were deficient in having the necessary materials on the scene when skilled craftsmen were available, and much of this lack was in standard maintenance material.

We solved the problem by: 1. Taking a physical inventory of all material and equipment owned by the Maintenance Unit; 2. Reviewing purchase orders to determine what material was being ordered repeatedly; 3. Developing a procedure for scrapping or surplusing material no longer required or desired; 4. Investigating and deciding on a system for controlling Maintenance Stores; 5. Improving the existing Work Order System.

Our maintenance stores control system utilizes two cards: one for ordering the material, and the other for keeping a permanent inventory record.

***"Maintenance Problems of the Small Plant"*: Richard E. Gladstone, Plant Engineer, Converse Rubber Co., Melrose, Mass.**

The plant engineer in the small plant runs the gamut from being an active member of the management group to being the guiding light on

a maintenance job. His opinion is the final word in all engineering matters. His department must maintain certain records, but every effort should be made to simplify and minimize all the paperwork. His preventive maintenance program must be developed with extreme care and be always subject to review and change.

***"Maintenance of Materials Handling Equipment"*: Philip A. Repino, Plant Engineer, Lebanon Steel Foundry, Lebanon, Pa.**

Some of the points to watch for in the maintenance of general purpose materials handling equipment include:

Cranes: Lubrications should be scheduled; runways kept aligned; careful inspection of bridge track wheels, shafts, bearing assemblies, collector systems; changing cable drums when grooves are worn and using right size cable; using overload limit switches, replacing lever and cable operated brakes with hydraulic ones; using non-breakable resistor grids and circuit breakers instead of fuses on protective panels.

Industrial Trucks: Scheduled recharging of batteries and cleaning to minimize electrical grounds; don't depend on operator to lubricate periodically; schedule inspections, lubrications and repairs.

Conveyors: Use automatic lubricating systems; inspect frequently and keep clean and properly aligned; maintain right speeds and belt tensions; watch belt fasteners; use magnets to remove scrap metals; clean spilled materials from rollers.

***"The Practical Use of Incentives In Maintenance"*: Bruno A. Moski, Director of Industrial Engineering, Yale Materials Handling Div., Yale & Towne Mfg. Co., Philadelphia, Pa.**

Whether or not to use wage incentives in maintenance is an extremely controversial subject. The decision will depend on: 1. Attitude of top management; 2. Attitude of Labor; 3. Quality of Industrial engineering leadership; 4. Quality of maintenance leadership; 5. Amount of incentive coverage; 6. Ratio of maintenance to production labor; 7. Number of employees per maintenance craft; 8. Availability of industrial engineering personnel; 9. Establishment of maintenance methods; 10. Establishment of time standards; 11. Control of timekeeping.

Competent industrial engineering leadership is essential, to team up with competent maintenance leadership, if wage incentives for maintenance labor are to be successful. Under the right conditions, wage incentives can result in payroll savings within the range of 1.73 to 1 and 22.46 to 1, in regard to the investment in industrial engineering manpower.

***"Fundamental of a Sound Apprentice Program"*: John L. Peterson, Manager, Trade & Technical Training, Firestone Tire & Rubber Co., Akron, O.**

The six basic points of a sound maintenance-apprentice program are: 1. Determine the objectives (Technicians or tradesmen?); 2. Make the program flexible; 3. Plan the Training Program (first, for the development of manipulative skills and second, to impart necessary job knowledge); 4. Selection of apprentices (evaluate from high school records, standardized tests, interviews); 5. Establish adequate records to show the specific skills of each employee; 6. Follow-up to see that able apprentices do not get sidetracked into use of just one skill and to see if there are weak areas in the general training that require more time or emphasis.

***"Maintenance Supervisory Training"*: H. B. Walker, Plant Maintenance Superintendent, Union Carbide Chemicals Co. Div., Union Carbide Corp., Texas City, Texas.**

In the training program for maintenance supervisory people, we have used all types of training: formal, informal, understudy, conference, conventions, and shotgun barrage. The trainees have been supervisors with from none to 25 years' experience, and most of the instructors have been in-plant personnel. The subjects have included: Labor Contract Interpretations, Principles of Industrial Engineering, Definitions of Duties and Responsibilities, Personal Time Budgeting, How to Inspect, Conference Leadership, Practical Politics (both local and national, but emphatically non-partisan).

Other supervisory courses cover: Human Relations, Cost of Doing Business, Management Principles, Job Leadership, Training Others, Improving Communications, Work Simplification, Paper Work Responsibilities, Corrosion, Metallurgy, Instrumentation, New Machinery, Analysis Techniques, and Rapid Reading.

***"Sanitation Control: Non-Food Plants"*: K. M. Smith, Maintenance Engineer, Caterpillar Tractor Co., Peoria, Ill.**

If both visitors and employees are to consider a company a good place to work, good housekeeping and effective sanitation practices are necessary throughout both manufacturing and office areas. The wide range of operations involved in industrial housekeeping and sanitation includes: office cleaning, rest room and locker room sanitation, cafeteria and kitchen cleaning, cleaning of production machines and equipment, cleaning of manufacturing areas, disposal of wastes, roadway and external cleaning, snow removal, and lawn care.

***"Sanitation Control: Food Plants"*: A. J. Monta, Chief Engineer, Welch Grape Juice Co., Inc., Westfield, N. Y.**

In a food plant, selection of building materials and equipment depends on their ability to withstand attack by food acids and every consideration must be given to the ease of cleaning. In a beverage plant such as ours, with the need for heavy washing and hosing, we found that totally-enclosed fan-cooled motors and enclosed switch gear and conduit were necessary. See that floors are well slanted and drains adequate. Good lighting is an inducement for personnel to help keep the place clean.

One maintenance problem in food plants is to make sure that the food product is not contaminated by lubrication equipment or by maintenance tools themselves. While such items as tanks and other storage units are cleaned at periodic long-term intervals, daily and twice-a-day clean-ups are required in much of the processing areas.

(Continued on page 57)

THE FIRE FRONT

Fire Effort Pays

"One of the most comprehensive fire prevention efforts in history last year was a vital factor in a reduction in fire deaths and property losses," according to Harry W. Miller, president of the National Board of Fire Underwriters. Mr. Miller pointed up the importance of fire prevention at a luncheon for directors of the International Association of Fire Chiefs.

Organizations compiling statistics report that the total fire fatalities in 1959 were 11,300, or 200 below the 11,500 for 1958.

Fire losses in the United States in 1959 totaled $1,047,073,000, a decline of 0.9 percent under the $1,056,266,000 for the preceding year and the first downturn since 1950.

"Cooperation of civic groups, fire departments, service clubs, schools, churches, commercial enterprises and industrial corporations in promoting fire safety helped reduce our fire toll," Mr. Miller said.

Fire safety education, which reached its peak during Fire Prevention Week in October, played an important part in reducing fire hazards, and halting an untold number of fires before they started. A vital factor in fire prevention activity, said Mr. Miller, is the Home Inspection Program conducted by the International Association of Fire Chiefs. He complimented the IAFC on its work.

Under the Home Inspection Program, 15 million homes in the United States were inspected by uniformed firemen last year with approximately 50 percent of the fire departments in the nation participating in the work. Home inspections provide a means whereby firemen can point out to the residents existing fire hazards and ways to eliminate them.

"It is a well known fact that national fire losses appear to grow with the national wealth," Mr. Miller pointed out. "However, they do not grow at the same rate. Our long term studies show that the proportion of national wealth destroyed by fire has actually been declining, an indication that fire prevention and fire protection activities have been and are still effective. Continued awareness on the part of the public of the fact that three-fourths of all fires are the result of human carelessness or forgetfulness, can help us reduce fire loses further," Mr. Miller said.

Annual Losses Drop

Fire damaged or destroyed an estimated $1,047,073,000 worth of property in the United States last year (1959), the National Board of Fire Underwriters has reported. This is 0.9 percent less than that for 1958, when estimated monthly losses totaled $1,056,266,000.

According to Lewis A. Vincent, NBFU's general manager, estimated losses for December (1959) totaled $96,444,000, an increase of 22.7 percent from losses of $78,582,000, reported for November (1959) and a decrease of 4.1 percent from losses of $100,523,000 reported for December, 1958.

These estimated losses include an allowance for uninsured and unreported losses.

Fire Loss Table

Month	1959	1958
January	$112,983,000	$99,918,000
February	98,120,000	103,853,000
March	99,610,000	102,722,000
April	90,689,000	99,061,000
May	81,597,000	85,633,000
June	77,867,000	90,048,000
July	82,334,000	80,782,000
August	74,660,000	75,491,000
September	83,027,000	73,303,000
October	71,160,000	73,393,000
November	78,582,000	71,539,000
December	96,444,000	100,523,000
TOTAL	$1,047,073,000	$1,056,266,000

Fire Hazards in Transporting Explosives

Stiffening of regulations governing the transportation of explosives was urged recently by the National Board of Fire Underwriters. The recommendation was given in a 22-page report on the explosion in Roseburg, Ore., last August 7.

The Roseburg explosion occurred when a truck containing dynamite and a blasting agent was detonated probably by the intensive heat of a nearby fire. Thirteen persons were killed, more than 125 others injured and property damage exceeding $9,000,000 resulted from the explosion. The National Board in the report called for the

bolstering of present regulations by the adoption of more complete safety codes with strict enforcement by state and local authorities.

"The unfortunate Roseburg disaster should stand as a strong and timely warning to other communities of the explosion perils when commercial explosives or their counterpart blasting agents become involved in fire emergencies," said Lewis A. Vincent, general manager of the National Board.

Set Off by Flame

"This devastating occurrence makes it obvious that both dynamite-type explosives and the more recent innovations of so-called field-prepared or pre-mixed ammonium-nitrate containing agents may, under certain fire conditions, be set off by the heat or flame."

The Roseburg explosion occurred when a truck in transit containing dynamite and the blasting agent was parked for the night on a city street a few feet from a building materials warehouse, which suddenly caught fire.

The fire department was fighting the warehouse fire when in the matter of less than 10 minutes, the disastrous explosion occurred. The detonation of the dynamite and blasting agent tore a crater 52 feet in diameter and 20 feet deep in the earth, destroyed most of the buildings in the immediate 12 blocks, and damaged hundreds of other buildings over a 50-block area. Glass breakage was reported as far as nine miles from the explosion. Tremors were reported as far away as 17 miles.

Exemplifies Explosion Danger

"This disaster clearly exemplifies the serious fire and explosion danger accompanying the increasing trend to transport highly hazardous material by motor vehicles over public highways, and the severity of exposure to which even small communities may be subjected unknowingly," Mr. Vincent added.

The report said that the Roseburg explosion also serves to direct attention toward two important and urgent needs:

(1) Increased recognition by manufacturer, shipper, and carrier of such articles of commerce of their broad and continuing responsibility for providing proper knowledge of their increased dangers, and the necessary precautionary measures to be taken in an emergency, and

(2) Better utilization of existing codes and recommended safe practices, and the enactment of uniform controls and enforcement programs with improved cooperation between federal and state regulatory bodies and local authorities.

The report added that fire emergencies call for prompt and decisive action at all times, and that fire officials have the unquestionable right to demand advance information in order to understand the dangers and risks in their operations and to apply intelligently the necessary skill dictated under emergency conditions.

Education of Carriers

It said further that it is also to the best interests of manufacturers, shippers and carriers to have their drivers briefed on the hazardous nature of their cargo and the safeguarding measures to be taken in any traffic and road emergencies.

The report pointed out that movement of explosive-laden trucks through or near heavily populated areas long has been a problem in many states. One state designates the routes and stop-over locations for such vehicles.

Although the Interstate Commerce Commission regulates the transportation of explosives and dangerous articles, complete and adequate enforcement is difficult to achieve. A few states have sought the answer through the adoption and enforcement of the I.C.C. rules on the state level, thereby bringing the manpower of state enforcement agencies to bear on the problem.

In addition to enactment and greater enforcement of existing laws and regulations at state and municipal levels, the report urges provision for safe routing of motor carriers transporting explosives and blasting agents to avoid populated and congested areas. It also recommends fire inspection programs covering such hazardous material and educational and fire protection programs for firemen as well as operators and drivers of explosive-bearing trucks.

It also stressed the need for adequate manning of fire departments in smaller communities, and recommends the provision of auxiliary electric power for base radio stations of municipal fire departments to insure continuity of communication with outside aid during emergencies.

In the Roseburg explosion electric power and gas utilities were disrupted.

The report specifically recommends the adoption of the National Board of Fire Underwriters' "Fire Prevention Code" for over-all fire safety regulation and broader fire prevention control of the storage and handling of various hazardous materials and devices, as well as conditions that result from their use or occupancy of buildings or premises.

Where more detailed regulations covering explosives and blasting agents are desired, the Code for Manufacture and Transportation of Explosives and Blasting Agents is recommended.

This latter code was prepared by the Committee on Chemicals and Explosives of the National Fire Protection Association, under the chairmanship of Mathew M. Braidech, Director of Research of the NBFU. It was the result of a five-year study and was officially adopted by the NFPA last July, just a few weeks before the Roseburg disaster. Observance of either of these codes would have prevented the Roseburg disaster, the Board said.

Copies Available

Copies of the report on "The Roseburg, Oregon, Fire, Explosion and Conflagration" are available at the National Board of Fire Underwriters, 85 John Street, New York 38, N. Y. In the Mid-West, write to the National Board of Fire Underwriters, 222 West Adams Street, Chicago 6, Ill., and in the Far West to National Board of Fire Underwriters, 465 California Street, San Francisco 4, Calif. The report also may be obtained from the Oregon Insurance Rating Bureau, 721 S. W. Oak Street, Portland 7, Ore.

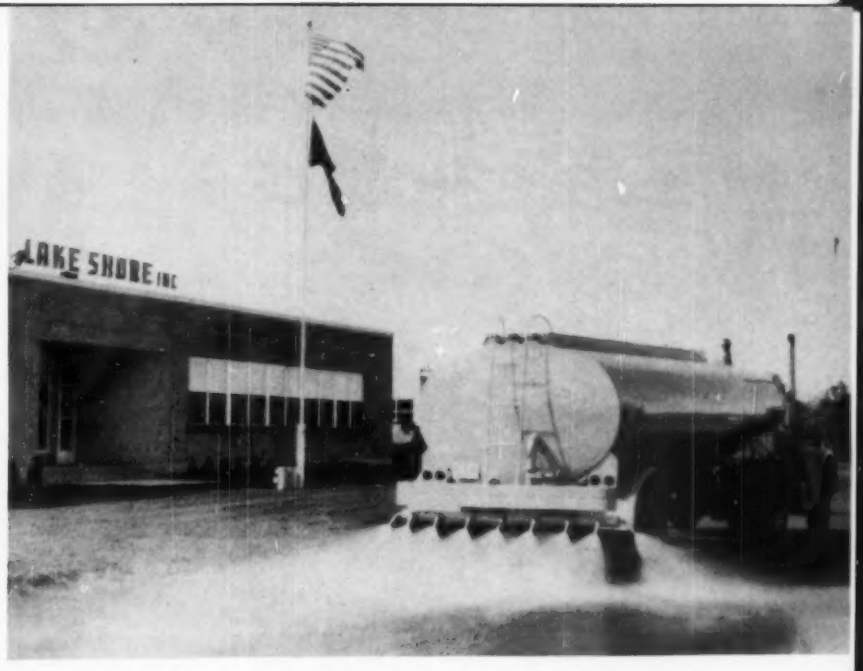


Fig. 1. Nine nozzles at rear of specialized tank truck disperse fog at rate of 120 gpm for dust control wetting action.

Double-Duty Fire Protection

"It's getting dusty—call the fire truck." ———

OR

———"Let's go for a swim in the fire reservoir."

These two quotations do make sense when one knows that a dust-laying fog truck doubles as fire equipment when needed, and that a sprinkler system water supply also serves as an employee swimming pool.

High pressure fogging for dust control plus application as auxiliary fire fighting equipment, has been designed into a single tank truck unit by a mining and marine equipment manufacturing company.

Developed for heavy service over rugged terrain, the tank truck is built with both horizontal and longitudinal baffles and bulkheads to prevent sudden load shift.

High pressure fogging equipment is stored in a nested compartment in the trailer nose for safety and cleanliness. It uses a straight centrifugal pump with an output of 120 gallons per minute at pressures of 120 psi, producing high density fog which is dispersed through 9 nozzles at the rear of the tank unit. All piping has been contained within the tank except for the discharge manifold at the rear.

Fig. 2. High pressure, centrifugal pump for spray unit is nested in trailer compartment nose for safety, cleanliness.

The fogging action permits more wet coverage per gallon of water on mining roads, since the fine water spray, without additional wetting agents, actually wraps itself around the particles of dust. Normally dust attracts and adheres to water in the form of droplets, producing unsatisfactory wetting action and unwanted runoff.

The tank capacity of 3800 gallons provides adequate water supply for fire underwriter requirements with an output pressure of 120 psi using 300 feet of 1½" high pressure hose. The pump is powered by either diesel or gasoline engine, operated by remote controls in the truck cab. Several of the major steel companies are using these units for their mining operations.

The term "practical luxury" may seem self-contradicting, but the Flick-Reedy Corporation, Bensenville, Illinois, has an employee swimming pool to which the term can be truthfully applied.

It is a luxury, to be sure, from the employee standpoint. There aren't many plants where one can take a cool dip right in his own plant after knocking off. Or, go home for supper and return with the whole family for a swim. And all at no cost.

It is also practical, from the standpoint of both management and labor. First of all, it is an integral part of the plant fire protec-

(Continued on page 58)

why industrial plants need good fire protection

by **W. E. ROSSNAGEL**
Safety and Fire Protection Engineer
Consolidated Edison Company of New York, Inc.

Each year fire causes the death of more than some 11,000 persons, and a property loss well over a billion dollars. No monetary value can ever be placed upon a human life so, instead, we will consider only the dollars-and-cents costs of industrial fires, and of insurance against loss by fire.

A few years ago the gigantic General Motors transmission plant at Livonia, Michigan was completely destroyed by fire, with a direct fire loss (that is, fire damage) of about $55 million. This was a modern one-story building covering about 32 acres, and was considered by many to be a fire resistive structure. Following the fire thousands of employees found themselves out of work, and without income. As a result of the reduced purchasing power of these employees and their families the local merchants experienced a serious drop in their sales, and profits. The city of Livonia had a loss of $55 million in the value of property upon which taxes had been paid, so the other taxpayers had to dig deeper into their pockets to pay the cost of running the city and its schools.

Unfortunately, automobiles cannot run without transmissions, so the other General Motors plants had to curtail production to keep pace with the limited number of transmissions produced. Some of their employees, throughout the country, were laid off. Likewise, other companies which supplied sub-assemblies, such as carburettors, batteries and tires had to slow down their operations, and lay off employees. And again the layoffs affected the economy of the respective cities.

Sales and Other Losses

General Motors dealers throughout the country lost sales on new cars to the extent of about 300,000 units, as shown by "Business Week" magazine. This meant loss of profits to the dealers, and loss of salesmen's commissions. In turn, those people spent less for non-

(Continued on page 46)

HOW A FIRE CAUSES TREMENDOUS LOSSES

Consider as a hypothetical case a two-story loft building of brick and wood joist construction, occupied by a manufacturer of precision instruments. This imaginary building and its contents are valued at about $1 million. Through pure luck, rather than through any effort on the part of the plant management, the company had had no serious fire loss in a number of years.

Then one day a small fire was discovered in a pile of discarded empty paper cartons which had been allowed to accumulate in a corner. Confusion reigned, and a number of men tried unsuccessfully to extinguish the fire before they finally called the Fire Department. In fact, by using the wrong type of extinguishers on blazing cutting oil they actually caused the rapid spread of the fire.

Considering the million dollar value of this hypothetical plant, the direct fire loss or damage did not appear large. However, there were indirect losses which had not been forseen by the plant management, and which were not covered by insurance. At the time of the fire all the employees were evacuated from the building for several hours, and of course all production came to a stop. But their pay continued. And during the remainder of the day very little work was done.

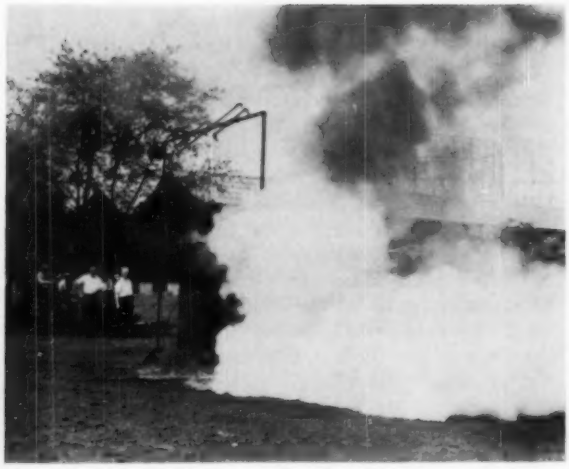
A crew of janitors and maintenance men worked several days, with overtime, cleaning up the mess left by the fire. Damaged machines were of special design, and they occupied a critical position in the production of the finished products.

Management and top supervision devoted much time to deciding upon the purchase of replacement machines. Clerks spent time making out orders for building repairs and for replacement equipment. The receiving department had to handle the new machines when they arrived, and mechanics had to install them, all at the prevailing wage scales.

Several months elapsed before the new machines were in operation. In the meantime shipments of the products had been curtailed because of the lack of vital parts needed to complete their assembly. Some impatient customers cancelled their orders, and procured the instruments elsewhere. Many of these customers were lost permanently.

Faced by several months unemployment after the fire a number of experienced craftsmen obtained employment elsewhere, and never did return. This necessitated the hiring and training of inexperienced men to replace them. During the training period the errors of the trainees caused the scrapping of many valuable parts. Another item, but of minor importance, was the cost of servicing the fire extinguishers used on the fire.

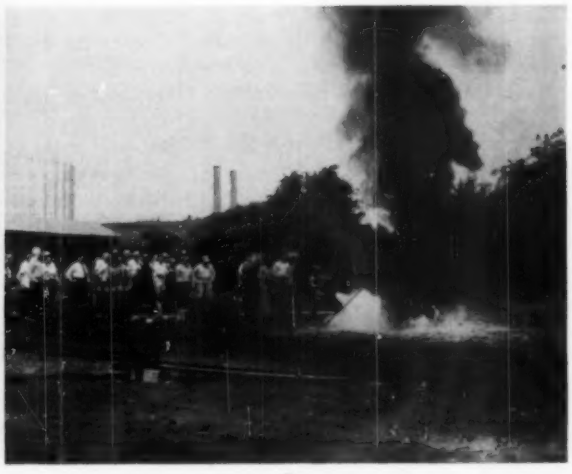
A



B

Good Fire Protection Includes Training

C



D

E

A **At Con Edison Fire School water fog is being used on gasoline spill from "crashed" airplane as part of drill.**

B **Here dry chemical extinguisher is being used at Fire School to put out a lively blaze in ground transformer.**

C **In this demonstration custom built mobile water spray unit is played on oil fire in a simulated substation.**

D **Another part of Con Edison Fire School training program uses CO_2 extinguisher on blaze in paint locker.**

E **Still another phase of an extensive fire protection training includes practice with company fire truck.**

essential commodities. In other words, the indirect results of this fire were felt by people in every part of our country. Perhaps some prospective buyers of that company's cars could not wait for the resumption of production, and they purchased other make cars. Some who had always bought General Motors cars may be well satisfied with the other makes, and may continue to buy them in the future.

The total direct and indirect costs of this fire have been estimated as approaching a billion dollars. Someone may say that, due to the huge size of the Livonia plant, the losses in this fire are not typical of a medium or small size industrial plant. But take a look at the accompanying section on "How a Fire Causes Tremendous Losses."

We will notice a remarkable similarity in the indirect costs of the fire in our small imaginary plant and in the giant Livonia plant. The only real difference is in the magnitude of the loss figures, but proportionately they run about the same.

How to Prevent Losses

What lessons can be learned from this example, and what can be done to prevent the recurrence of such losses in the future? The various fire insurance organizations provide periodic inspections of industrial plants, at which time their inspectors look for potential fire hazards, and report them to the plant management. Very often, however, their recommendations are not taken sufficiently seriously. Furthermore, the visits of the inspectors may be infrequent, and lots of things can happen between these inspections.

The Plant Superintendent in our hypothetical case has learned from this fire that good housekeeping is the first step in fire protection. Or has he? He ordered a general clean-up, but before the inspector makes his next visit things will probably be back to normal, which means not so good.

After several months delay the management finally decides to embark upon a definite fire protection program. However, they have no employee with any experience in fire protection to assign to this work. They realize that in order to save money, or make money, in a business it is usually necessary to invest or spend some money. So they finally decide to engage a professional Fire Protection engineer as a consultant on a fee basis, and he will periodically inspect the plant, weekly to start, but monthly when conditions begin to improve.

Learning By Looking

At each visit the Fire Protection Engineer now spends sufficient time in the plant to look into every room, every corner and out-of-the-way place, the boiler room, the loft and the yard. If he sees an acetylene torch being used, he may stand there and observe the entire operation in order to learn the practices followed in the plant. He inaugurates a system of fire permits, it being necessary to obtain a permit and a fire watcher before any cutting or welding job is started. Aisles and exits are kept unobstructed. The required number and type of fire extinguishers are checked, and arrangements are made for their proper servicing. When alterations or additions to the building are contemplated he is asked to look over the plans and specifications, and to make any necessary recommendations.

Tests are conducted periodically on the standpipe system and on the yard hydrants in order to be sure of adequate pressure and water flow. The storage and use of flammable solvents are investigated. Instructions are given to the employees in the proper operation of the various types of fire extinguishers, and in due time a fire brigade will be organized and trained. Remember—it was the improper use of extinguishers that permitted the small fire to get out of control.

Less Efficient at Night

In the average industrial plant there are many high salaried members of Management and Supervision present during normal working hours to assume all responsibility should a fire occur, or some other emergency develop. But ironically, at night, and on week-ends and holidays, they may trust the safety of the million dollar plant to the judgment of an elderly, untrained and possibly physically disabled watchman who may, or may not, conscientiously do his job.

A younger, well trained mechanic, who is familiar with the entire plant, should be on duty in off hours. And his pay should be commensurate with his responsibility. Such a watchman should be well acquainted with the location and operation of all valves, electric switches, the heating plant, the air conditioner, etc., and he should be trained in the proper use of all extinguishing apparatus. Then should a fire occur, a pressure pipe break, the oil burner fail, or any other emergency occur he will be able to cope with the situation immediately.

Danger of Serious Injury

The Fire Protection Engineer walks into the boiler room of this imaginary plant, and finds a painter cleaning used paint brushes by soaking them in a large open pan of gasoline on the floor, some distance from the oil fired boiler. The painter does not realize that gasoline evaporates very rapidly from this large exposed liquid surface, or that its vapor is several times as heavy as air and collects on the floor, in pits, and in other low places. As the gaseous products of combustion pass up the chimney air must be drawn into the oil burner blower and into the combustion chamber, creating a draft across the room. The past experience of the Fire Protection Engineer calls attention to the fact that the gasoline vapor may be drawn across the floor and into the oil burner, become ignited, and the flame propagate back through the trail of vapor on the floor to the pan, and ignite the gasoline. The painter could be painfully, or even fatally burned.

This is not the product of the imagination, for many incidents of a similar nature are on record. Potential hazards such as this would not ordinarily be recognized by anyone who has not specialized in fire protection engineering problems.

Several years ago I was asked, as a special favor, to make a brief survey of a large, poorly maintained industrial plant with several acres of buildings close together. "Poorly maintained" refers here to the fire protection viewpoint. Actually the aisles were kept clear, and a casual visitor might disagree with my opinion. A long list of important recommendations was presented to the management, the first being to engage a professional Fire Protection Engineer to make weekly inspections of the plant. Conditions were so bad that it was suggested they get the very best Engineer obtainable, regardless of the cost. Some months later I was passing the plant, and decided to stop in to learn what had been accomplished. No change in any of the numerous fire hazards was noticeable. It turned out that the Superintendent had decided not to engage a Fire Protection Engineer. Instead, he promoted the assistant head janitor to do the fire protection work. Not only was this man totally unqualified for this job, but his fellow workmen were aware of his limitations and had no respect for his recommendations, even though they might be in order. Consequently, little or nothing was accomplished.

The Fire Protection Engineer can frequently save the plant additional money. He will ask management to obtain for him from the representative of the fire insurance company a list of sub-standard conditions in the plant for which a penalty was applied when the insurance rate was determined years ago by the Fire Insurance Rating Organization. In the instance of our hypothetical plant, the report received might indicate the following deficiencies:

1. The brick building walls are not of the required thickness. This calls for a very small penalty in the insurance rate, not enough to justify any alteration to the building walls.

2. The stairs are not enclosed by fire resisting walls or partitions, as required, and a slightly larger penalty is applied. Management will investigate the economic feasibility of correcting this condition.

3. For the absence of approved safety cans for handling flammable solvents a heavier penalty is applied. Only a half-dozen safety cans are required, at a cost that is only a fraction of the annual saving that can be had if they are procured.

4. There was a lack of approved waste cans with self-closing tops for the disposal of oil rags and waste. These cans are not expensive, either, compared with the savings of possible penalties.

5. The accumulation of combustible rubbish, or in other words poor housekeeping, was the direct cause of the fire and the resultant heavy financial loss, and it is an item about which something can be done at very little cost. In fact, any extra premium now being paid because of this condition could nearly equal the yearly wages of another janitor.

FORMER SAFETY DIRECTOR AVAILABLE

Seeks position editing house organ and preparing safety bulletins. Able writer. Can assist with safety program and contests. Knows how to maintain safety awareness and control loss expense. Available immediately for full or part time. Write to: Box 81, Safety Maintenance, 75 Fulton St., New York 38, N. Y.

6. In many locations throughout the plant the electric wiring is substandard. Permanently correcting this condition should not cost much more than the annual saving of the first year. After that, the saving is very real.

The Fire Protection Engineer goes into action, and he convinces Management to have these conditions corrected. Then a request is made through the insurance carrier to arrange for a re-inspection of the plant by an inspector of the Rating Organization. The sub-standard conditions have been corrected, and the penalties are removed from the rate schedule. This results in a very sizeable reduction in the annual premium for an indefinite number of years.

But remember this: **If the plant is a good fire risk, the fire insurance premium is low. If it is a poor or bad risk, the premium is high.** So, if a reduction in rate is to be obtained, the initiative must be taken by Management.

The Fire Protection Engineer will also have management inquire what further reduction in rate may be obtained if the night watchman is required to punch a recording clock on each of his hourly tours. This can be a clear saving after the first year.

What about the installation of automatic sprinklers in this old building? Sprinklers are a most effective and reliable form of fire protection, and their installation will bring a big reduction in premium. Depending upon the type of system, the number of sources of water supply, and other factors the size of the reduction in the yearly premium may vary considerably. Since the cost of installing a sprinkler system is high, management may have to use a sharp pencil to determine if the cost can be economically justified. On an average the installation of a sprinkler system should pay for itself in a relatively short time, and the protection continues indefinitely.

By the judicious expenditure of relatively nominal sums of money to reduce the fire hazards of most industrial plants, the cost of the fire insurance can be materially reduced. However, many plants built in recent years have been designed and constructed in accordance with fire protection standards, and are operated in the prescribed manner, thus enjoying a minimum fire insurance rate.

The insurance rate on the contents of a building will be somewhat higher than on the structure itself. But the correction of the deficiences which result in a reduction of the premium on the building often will automatically bring about a reduction in the premium on the contents. As the cost of the improvements has already been charged against the building, the reduction in the premium on the contents is all pure saving. And don't forget that by improving conditions in the plant, and thus preventing or quickly controlling fires, *all the indirect non-compensated fire losses can be avoided.*

From an address presented at the Greater New York Safety Convention. Pictures by courtesy of Consolidated Edison Co. of New York, Inc.

HIGH LIFT ELECTRIC TRUCK

A special high-capacity, high-lift platform "walkie" truck with capacities up to 19,000 pounds has been developed by Lewis-Shepard Products, Inc. Designed to solve high capacity handling problems in limited maneuvering areas, the powerful 24-volt Jackstacker solves many applications where heavy duty fork lift trucks cannot be used. Suitable for handling heavy dies from storage to processing areas, this special "walkie" design can be constructed to meet most customer demands in capacity, speed and space requirements.

For details, use **Key # MH-1** on inquiry card on page 1.

VERSATILE AIR HOIST

A new air powered hoist by Joy Mfg. Co. offers a choice of several throttle and brake systems that make it adaptable for use in such divergent areas as mine shafts for hoisting men and materials, car spotting at industrial plants and mines, submarine drill barges as anchor or spud hoist, barge spotting at docks, decoking tank service. The hoist has a lifting capacity ranging from 27,000 lbs. at 37 fpm to 3,700 lbs. at 220 fpm.

A five cylinder, radial air motor (10, 17 or 23 hp) with integral gear case drives the large rope drum through a multiple roller chain. The rope drum has a capacity of 2300 ft. of ¾-inch wire rope.

For portability, the entire assembly is mounted on a skid type base.

All controls for the new JCP-120 hoist—throttle, brake and clutch—are mounted on the hoist in the standard model but can be removed and operated from a remote position. The unit can also be equipped with electric motor drive of 10 to 25 hp or air-cooled gasoline or diesel engine drive.

For details, use **Key # MH-2** on inquiry card on page 1.

HYDRAULIC HAND LIFT TRUCK

A 3000 pound capacity model has been added to the hydraulic, hand lift-truck line of Yale Materials Handling Division, The Yale & Towne Mfg. Co. For use with double or single-faced pallets, the new unit provides a full four inches of lift with seven, easy strokes of the balanced operating handle. Lowering the load is controlled by a foot release pedal.

Entry into double faced pallets is facilitated by three hardened steel rollers in each fork tip. Standard fork frames are 32, 36, 42, 48, 54 and 60 inches long and in various widths. Rubber tire front wheels and aluminum rear wheels are standard, but steel, Flor-Savr and Polyurethane surfaces are also available as optional equipment. A

MATERIALS HANDLING DEVELOPMENTS

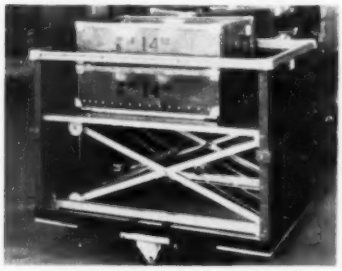
five-pint hydraulic oil reservoir assures continuous operation with infrequent maintenance.

The hydraulic lifting unit is totally enclosed for protection and the pump is located in a position guarded from outside shock and possible damage.

For details, use **Key # MH-3** on inquiry card on page 1.

ELEVATING BOTTOM HAND TRUCKS

A new "floating bottom" available in standard Kennett hand trucks for faster loading and unloading is announced by National Vulcanized Fibre Co. The new device keeps truck contents at waist level continually which reduces worker fatigue and injuries. These Unilevel trucks are designed to simplify in-plant distribution of metal, wood, and plastic products, sub-assemblies, and textile materials because workers handle materials at the top of the truck without bending over for objects near the bottom. They have a "floating"



spring-loaded hardwood bottom supported by heavy-duty torsion springs which permit the bottom to move up or down depending on the weight of the contents. Regardless of weight distribution, the bottom remains level and in constant alignment at all times because of a pantagraph arrangement of steel guide arms. Unilevel trucks are available for handling maximum loads up to 450 lbs.

For details, use **Key # MH-4** on inquiry card on page 1.

HOOK SAFETY LATCH

An inexpensive safety latch for hoist hooks which prevents accidental detaching and dropping of loads has been introduced by The Harrington Company. The new type latch can be fitted on any hoist hook.

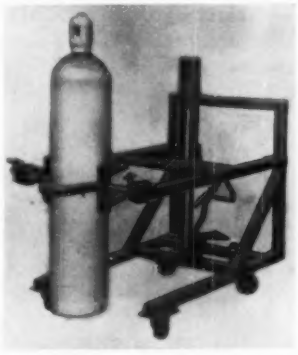
The new safety device consists of a clamp-on collar and a corrosion resistant spring-loaded safety latch. The collar—held permanently in place by a bolt and self-locking nut—is made of a manganese-bronze alloy that is sufficiently ductile to conform to the contour of any hook shank. Lugs on both sides of the safety latch allow personnel to set or release the device without placing fingers in the hook opening. This prevents possible injury.

The latch is held firmly in place by a stainless steel spring. In addition, the latch is notched on its free end to prevent shifting from the locked position. The safety latch available in four sizes—for one-quarter to three ton units—will fit any manufacturer's hooks.

For details, use **Key # MH-5** on inquiry card on page 1.

CYLINDER CLAMP AND LIFT

The great increase in uses for cylinders containing dangerous materials has created a demand for



a safe method for handling these containers. An answer to this problem is the Sterling Fleischman Hydaulic Drum Lift. The versatile unit has a special clamp for the handling of cylinders containing chlorine, butane, or similar materials. This clamp is readily interchangeable in the BM-3 unit and can accommodate cylinders from 14½" to 15½" in diameter and permits these cylinders to be raised and rotated for the emptying of the contents. Special clamps can be made for cylinders of other diameters.

For details, use **Key # MH-6** on inquiry card on page 1.

DRUM AND BAG LIFTER AND DUMPER

A time and labor saving device for lifting and dumping drums or bags has been announced by Conveyors and Dumpers, Inc. The unit is designed for low-cost batch loading of mixers, blenders, kettles, tanks, bins, and similar equipment. The Cesco Jr. Model DU lifts and dumps a variety of standard size drums and can be adapted for handling bags. Available in capacities to 400 pounds and dumping heights to 12 feet, models are stationary or portable. Variations can be designed for other heights and capacities.

For details, use **Key # MH-7** on inquiry card on page 1.

TRAILER LOADING TRUCKS

Three battery-powered, low silhouette fork-lift trucks capable of double stacking freight in truck trailers have been introduced by the Industrial Truck Division of Clark Equipment Co. An addition to the "Clarklift" line, the new trucks have an over-all height of 71 inches to the top of the overhead guard. This low sihouette, combined with Clark's carbon pile drive control which provides stepless acceleration similar to an automatic transmission, gives the machine the compactness and mobility needed to drive in and out of truck trailers safely with capacity loads. Free lift in the upright permits in-truck stacking as high as 51 inches in a 72 inch high trailer.

The fork trucks in this ECLS Series are available in capacities of 2000, 3000 and 4000 lbs. Dimensioned for operator comfort, the driver's area provides ample legroom and access from either side. Extra safety is provided by an automatic "deadman" brake which is applied immediately when the driver leaves his seat.

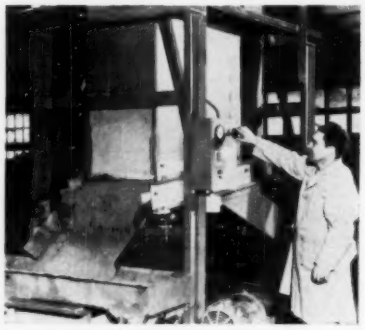
For details, use **Key # MH-8** on inquiry card on page 1.

VIBRATING FEEDER

The "Amplitrol" feeder, a new mechanical vibrating feeder with an exclusive pneumatic control system, is being introduced by the Carrier Conveyor Corp. The feeder is ruggedly constructed with a heavy frame and single channel, steel trough, yet it is extremely simple in design and easy to operate.

The drive unit is composed of a 900 rpm, ac motor-exciter mounted between two banks of heavy-duty, industrial air springs. Small offset weights are mounted on each end of the motor's double shaft. Dust-tight operation is provided by the totally enclosed, non-ventilated 220/440 motors. The motors are built for vibratory service with pre-greased, sealed ball bearings.

Air springs are an efficient, flexible source of drive energy because their stiffness can be accurately and quickly changed during operation. Amplitrol feeders require only an ordinary 50 psi plant air supply

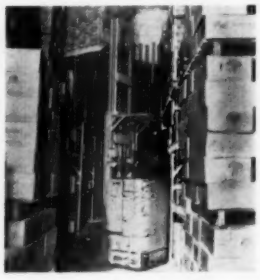


system. No air is used by the springs, except during rate changes. A standard control panel for both air and power supply is provided. Control can be local or remote, manual or automatic, and it responds to any standard process instrumentation.

For details, use **Key # MH-9** on inquiry card on page 1.

ELECTRIC TIERING TRUCK

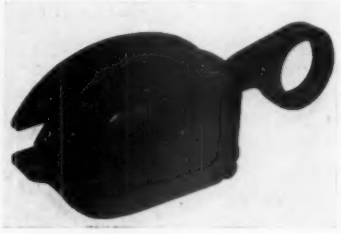
A rider-type narrow-aisle electric tiering truck that incorporates a 24-volt electrical system has been introduced by Lewis-Shepard Products, Inc. The L-S 24-volt Model "MN" truck is designed to provide faster materials handling operations in extremely cramped spaces. The truck has traveling speeds of 4.5 M.P.H. empty, up to 4.2 M.P.H. loaded. Its lifting speeds are as much as 50 F.P.M. empty, 42 F.P.M. loaded. With a 40-inch long load, the unit will maneuver and high stack goods in aisles only 6-feet wide. The truck is a straddle-type vehicle with standard forks, and is offered in capacities of 2000 or 3000 pounds.



Operated from a comfortable and safe stand-rest driving position, the 24-volt truck has a side-entry cab as standard equipment. A rear entry cab also can be furnished.

There are four speeds in both forward and reverse directions, and three separate braking systems —dynamic braking for smooth stops, controlled plugging to reverse direction, and a deadman-type electric foot brake that applies automatically when the operator's left foot is released from the brake.

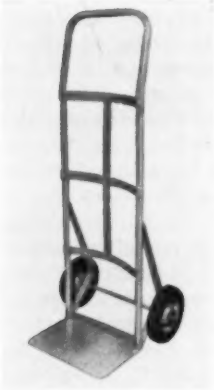
For details, use **Key # MH-10** on inquiry card on page 1.



NON-MARRING LIFT CLAMP

A new non-marring clamp designed to lift stainless steel, copper, aluminum and other polished metals has gone into production at J. C. Renfroe & Sons. The new Model NM Clamp is characterized by smooth-ground jaws with no teeth. A positive grip is achieved by a finger-adjustable wedge on one side of the jaw and a five-to-one gripping ratio on the opposite side. In obtaining a tremendous grip to prevent slipping, this clamp has a safety factor of three to one. It may be locked on the load or unlocked by manual manipulation of the wedge-screw adjustment. The NM currently is being manufactured in weight-lift sizes ranging from one-half to 12 tons, with other sizes available on request.

For details, use **Key # MH-11** on inquiry card on page 1.

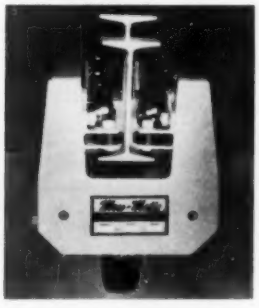


UTILITY HAND TRUCK

A new light-weight, low-cost, all-steel welded construction utility truck has recently been put into production by the Fairbanks Company. Specifically engineered for easy-to-handle maneuverability, the "Mitey Handy" Utility Truck incorporates a load-easing stair climber onto an exceptionally light-weight, sturdy one-piece frame. The truck-wide, full-size handle permits holding or moving truck with one hand.

Curved crossbars facilitate easy handling of boxes, barrels, bags, cases, cartons, and kegs. The truck's nose plate, which can be brought close to the load, is welded to the back of the legs for extra strength. It is furnished with semi-pneumatic wheels in three sizes—6, 8, and 10 inches.

For details, use **Key # MH-12** on inquiry card on page 1.



CRANE FOR 40 I-BEAM SIZES

A new Meco-Matic crane by Mechanical Equipment Co. is operable on over 40 standard structural I-beam sizes, wide flange beams, and on hardened monorail track. The end trucks of this "universal" unit also traverse the junction of unlike beams. The new supension principle involves free-floating flangelesss wheels and side guide rollers which bear against the web of the beam rather than against the flange.

The same unit may be motor-driven, hand-geared, or of the "push" type. In the power unit is a center-mounted motor, with reduction gearing unit operating in an oil bath and equipped with bearings.

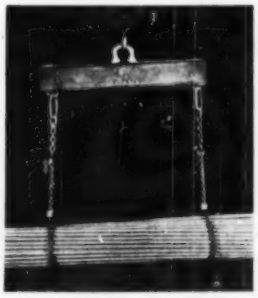
The versatility of this crane is possible because the end truck wheels are flangeless and aligning. Alignment is supplemented by side guide rollers bearing against the beam web, acting as rolling flanges and also as safety lugs. The crowned flangeless wheels provide a free, floating action, without binding, and are reversible for double life.

For details, use **Key # MH-13** on inquiry card on page 1.

AUTOMATIC LOCK BUNDLING CHAIN

Equipped with a drop-forged automatic locking device, and fabricated with one end of the chain permanently fastened to this lock, ACCO Bundling Chain is said to simplify bundling operations by eliminating pear-shaped links and the need for pins and wire to bind and hold bundles. With regular low carbon, high test, or alloy chain—depending on the type of service and weight of the load—the assembly is available from American Chain Division, American Chain & Cable Company, Inc.

In locking operations, the free end is put through the housing and a grab hook on the dropper chain pulls the chain tightly around the bundle. The hook's latch automatically falls in between the links, locking the bundle securely. In unlocking, the chain is again en-



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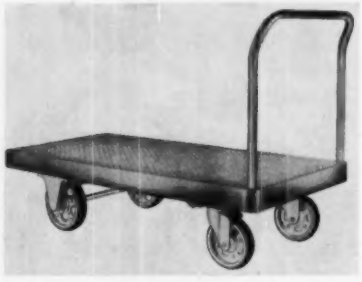
(Use Key # P-15 on Inquiry Card on page 1)

gaged by the grab hook and lifted, allowing enough slack in the chain for the latch to be flipped over. When the bundle is set down, the chain is run through the housing, automatically releasing the load. The ACCO lock is made in two sizes: one for ½, 9/16 and 5/8 inch chain; the other for 5/16 and 3/8 inch chain.

For details, use **Key # MH-14** on inquiry card on page 1.

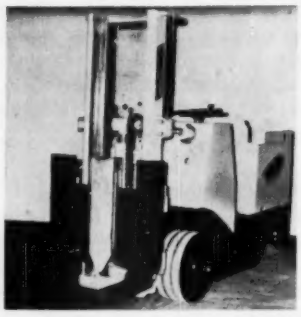


LIGHTWEIGHT FLOOR TRUCKS

"Structo-Lite" Trucks, a new series of lightweight, all aluminum floor trucks are being manufactured by Nutting Truck and Caster Co. They are for handling a variety of materials in warehouses, terminals, manufacturing plants, textile mills, meat packing plants, department stores, dairies, food processing plants—wherever lightweight, easy rolling, more payloads and corrosion-free properties are required.

About ⅓ lighter than steel trucks of the same size, they are made of a heat-treated structural aluminum alloy that is non-sparking, non-toxic, resistant to attack by foods, unaffected by many chemicals and most acids and alkalis. Safety tread deck is enclosed by double angle frame. Welded construction assures proper frame alignment at all times and to eliminate possibility of "play" and rackiness between members. Braced beneath by 2 full lengthwise and 3 crosswise angle members. Corners smoothly rounded. Standard model has one interchangeable push handle. Available with two handles; also, with one or two racks. Available in 6 standard deck sizes.

For details, use **Key #MH-15** on inquiry card on page 1.



MAGNETIC HOLDER ATTACHMENT

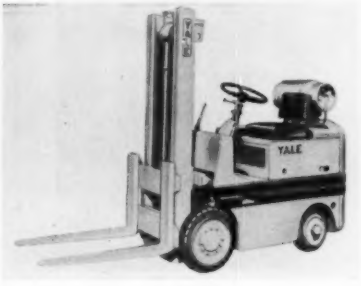
A new magnetic tin plate attachment designed for holding loose sheets of tin plate during transporting on a pallet has been announced by the Elwell-Parker Electric Co. The magnetic action securely grips the load to prevent slipping or tipping of the plate.

The magnetic control switch mounted on the truck cowl has a maintained contact position to energize the magnet for securing the load. The "off" position of the switch de-energizes the magnet for releasing the load and for standard fork truck operations. The attachment does not reduce the capacity of the truck and is readily removable for installation of longer forks.

For details, use **Key # MH-16** on inquiry card on page 1.

HAZARDOUS AREA LP-GAS TRUCK

To broaden the application of LP-Gas powered industrial lift trucks into specified hazardous locations, Yale Materials Handling Division of The Yale & Towne Mfg. Co. has been granted Underwriter's Laboratories LPS approval on propane powered models in their G-52 and KG51 lines of trucks comprising a capacity range of 2000 to 10,000 pounds. According to specifications and recommendations prescribed by the National Fire Protective Association, LPS trucks are the only LP-Gas powered lift trucks which can be safely used in locations defined as hazardous because of the presence of combustible fibres or flyings or hazardous gases or liquids being stored in closed containers.



Yale's LPS trucks fit the safe usage requirements spelled out for locations listed in the Code in parts of Class I, Division II, and Class II, Division II, and all of Class III, Division II. These classifications describe a variety of locations containing fire-hazardous liquids or gases, or a variety of combustible dusts or fibrous materials.

Among the modifications necessary to achieve the LPS label are a spark-arresting "Cyclone" muffler and a special flame arresting device. Another important element is a generator and battery cutout switch easily accessible to the operator so that the full electrical circuit can be broken in case of emergency. Other precautions include totally enclosed generator and starting motor, covered battery terminals, rubber boots over all electrical terminals and a UL listed, flame-arresting air cleaner.

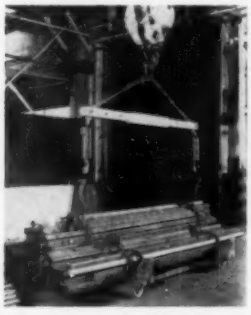
For details, use **Key # MH-17** on inquiry card on page 1.

AUXILIARY CRANE AND HOIST CONTROL

The "Hydra-Set" auxiliary crane and hoist control instrument, manufactured by Mefco Sales & Service, Inc., is now available in 50 and 100 ton capacities. The instrument is installed as a link between the crane hook and the load, is entirely

self-contained and requires no air or outside hydraulic lines to operate. It operates independently of the crane or hoist system and places control in the hands of an operator having personal observation of the parts being handled. Loads up to 100 tons can be raised or lowered a distance of 12 inches with close accuracy. Applications include machinery and equipment assembly, precision mating, maintenance, production assembly, structural steel placement, etc. Available in 1, 2½, 5, 10, 20, 50, and 100 ton capacities, and larger models can be ordered.

For details, use **Key # MH-18** on inquiry card on page 1.



SOLENOID CHAIN RELEASE

A new materials handling device, the Acco Solenoid Chain Release, has been introduced by the American Chain Div., American Chain & Cable Co. to provide safety in those operations where conditions make it dangerous for a worker to unhook the load. Originally designed for use in steel mill soaking-pit operations, the new chain release may be utilized in other material handling jobs where bars, tubes, strips and similar materials are being transported with the aid of sling chains. The unit is remote-controlled by the crane operator from his cab. By pushing a button, he activates the solenoids at each end of a spreader bar. This in turn expels the chain from its hooks and releases the load. As a safety factor, all loads must be on the floor with tension removed from the chain before the solenoids become operative. The solenoid device is available in single or double spreader bar models or without the bar.

For details, use **Key # MH-19** on inquiry card on page 1.

CASTER SIDE BRAKE

Designed for medium duty applications, this positive-acting, adjustable brake features a formed brake shoe which contacts maximum area of tire tread in a vertical axis of the center. The actuating force is in line with the braking force. The brake shoe is controlled by a cam action for either secure locking or complete release. Brake actuating cams are a preformed part of the brake shoe, fully hardened and designed to afford maximum motion of the brake shoe. An eccentric surface mounted on the axle bolt permits compensation for tire wear. Made by Jarvis & Jarvis, Inc., it is designed for use with standard 4" x 4" top plate casters; casters with steel disc replaceable tired wheels, 4", 5" and 6" diameter; and all rubber wheels, 4" to 6" in diameter, with hard or soft tread. It is also applicable for rigid models.

For details, use **Key # MH-20** on inquiry card on page 1.

HYDRAULIC LIFTER & TRUCK

Langley Manufacturing Co., Inc., has announced a new mobile, compact hydraulic lifter and transport truck, designed for use by one man. Featuring foot operation, the Model FPD Little Dickie needs minimum foot effort for lifting loads up to 750 pounds to a height of 64" above floor level.

The unit is safe in operation, with fluid pressure, rather than an operator, holding the load. No lifting handle or open gears that constitute a snagging danger are used. Optional equipment includes a floor lock, floor protective wheels and pipe runners to assist loading onto trucks. Little Dickie features tight maneuverability. It finds ap-

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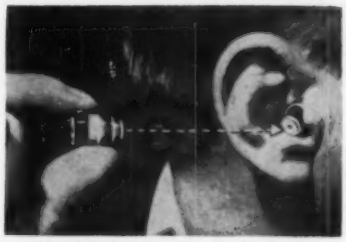

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(Use Key # P-16 on Inquiry Card on page 1)

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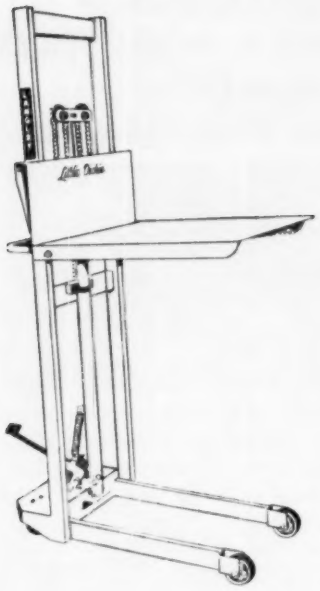


plication as a warehouse utility lift and transport truck, in tiering, stacking, breaking down piles and loading, stock positioning in cutting, milling, sawing and similar operations, and carrying dies, jigs, molds, castings, index heads and other tools. Lifting speed is one inch per stroke under full load conditions and unit is painted a bright safety yellow for maximum visibility. Also available is a battery powered model, that lifts at the rate of 20 feet a minute and has built-in AC overnight charger.

For details, use **Key # MH-21** on inquiry card on page 1.

CONVERTIBLE MATERIAL-PERSONNEL TRUCK

A new electric powered burden and personnel carrier has been developed by The Moto-Truc Company for in-plant use. Tradenamed the "Station Wagon," the new truck combines versatility and heavy duty construction. Equipped with four comfortable, leather covered seats, the truck can be used to transport personnel and plant visitors. The seats are so designed that they can be removed in seconds to convert the truck into a burden carrier which can handle long loads, packages, mail, maintenance equipment, production parts, etc. Equipped with a suitable coupler the truck can also be used as a towing tractor.

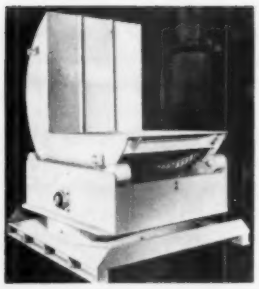
The truck is furnished with either a 12 or 24 volt battery for speeds up to 10 MPH. Controls are arranged in automotive fashion with wheel steer, foot operated brakes and foot pedal speed control which provides four speeds forward and reverse. Time delay and anti-plugging controls are included. Other features include a protective cowl, pneumatic tires, horn and key lock.

For details, use **Key # MH-22** on inquiry card on page 1.

GAS CYLINDER TRUCK

A new truck for handling liquid gas cylinders has been announced by Nutting Truck and Caster Co. Although especially designed to transport cylinders in warehouses and to and from delivery trucks, this truck has a tapered "cradle" frame with "toed in" nose prongs to permit handling of other cylindrical objects. All steel welded construction with 10 x 2¾" roller bearing semi-pneumatic rubber tired wheels for indoor and outdoor use. Tires are puncture proof and never require inflating. Handle length—56"; over-all width—23⅝"; approximate weight 36 lbs.

For details, use **Key # MH-23** on inquiry card on page 1.



COIL TURNOVER CRADLE

A 20,000-pound-capacity Turnover Cradle which automatically rotates and palletizes rolls of coiled materials has been added to the product line of La Deau Mfg. Co. The new model is especially suited for use by fabricators of strip materials. By simplifying the process of palletizing, the device permits stacking of coils in a manner to save floor space and eliminates egg-shaping of coils and dangerous band breakage.

The coil is placed vertically on the cradle with a fork lift truck against the pallet. The cradle rotates 180° horizontally and 90° vertically, palletizing the coil and rotating it to face the truck, ready for removal. The whole operation takes less than 20 seconds for the new 20,000-pound model, which occupies about 35 square feet of floor space.

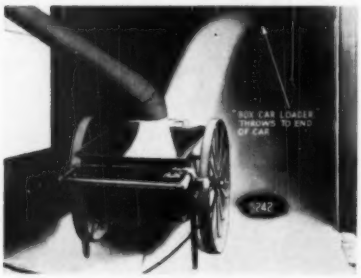
For details, use **Key # MH-24** on inquiry card on page 1.

NON-SPARKING DRUM HOOK

Handling drums of volatile liquids in hazardous areas has been solved by the Morse Manufacturing Company, Inc., with the new #41M Drum Lifting Hook. The

cast hook, made of non-sparking manganese bronze, is connected to a large 3" diameter bronze ring with double 7/16" diameter brass rods. The new Non-Sparking Drum Lifting Hook is attached to any type of hoist by means of the ring and the hooks are engaged over each end of the drum for safe movement. The hooks have clearance for a 3/4" rim and will accommodate standard 55 gallon drums as well as any drum up to 34" in length. Capacity is 1000 lbs.

For details, use **Key # MH-25** on inquiry card on page 1.



BOX CAR AND BIN LOADER

S-A Loaders and Pilers developed by Stephens-Adamson engineers are eliminating hand trimming in box car and bin loading and piling operations handling fertilizer, sand, grain or other bulk materials. Operating on the centrifugal action principle, material is thrown from the unit's short endless high speed conveyor belt, in any desired direction.

By directing the stream of material toward one end, the unit throws material to the farthest corner and requires no further attention. The operator, by simple adjustment, can direct distance of material travel by raising or lowering. Available in normal duty and heavy duty models, the latter designed to handle larger lumps in unusually large capacities.

For details, use **Key # MH-26** on inquiry card on page 1.

HOPPER ACTIVATOR

Development of a new device that will guarantee reliable flow of dry materials from any hopper or storage bin is announced by Vibra Screw Feeders, Inc. Known as the Vibra Screw Hopper Activator, the device features separate mechanical vibrating and pneumatic mechanisms with universal application to any size hopper or any type of dry material. Applicable in many industries including chemicals, food and pharmaceuticals, it holds particular significance for closed-loop processing operations where bridged hoppers can tie up an entire production system because of lack of material flow.

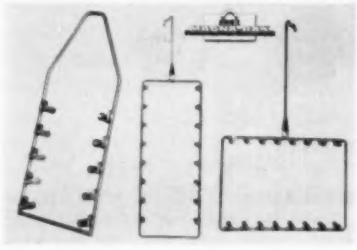
The Hopper Activator consists of a vibrating shaft, with attached spiders or vibrating arms, which is centered vertically from the base to the top of the hopper. Where stored materials do not respond to the vibrations imparted throughout them, the pneumatic aspect of the system takes over. The entire vibrating assembly is mounted on

an air cylinder, which when activated, causes the assembly to move up and down slowly through the material. The stroke is approximately one foot according to the size of the hopper and the material it contains.

For details, use **Key # MH-27** on inquiry card on page 1.

HANGING MAGNETIC RACKS

Thoroughly tested by the automotive industry, for which it was originally developed, the new Eriez permanent magnetic Magna-Rax, employed with overhead or monorail conveying systems, is also suitable for other industrial applications involving the handling of large or small ferrous parts, stampings, etc. in operations such as dipping, spray painting, washing, coating, plating or simply conveying.

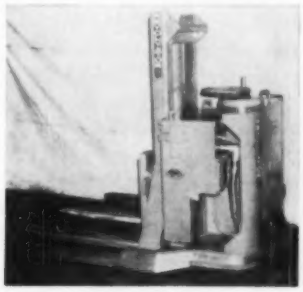


The Magni-Rax unit is composed of a steel frame to which are welded a battery of Eriez permanent, non-electric doubled-ended magnets. Large units, such as a car door, or numbers of smaller pieces are easily loaded and securely held and conveyed through painting or other operations, with a minimum of surface being covered by the cadmium-plated tips of the powerful magnets. The hangers readily adapt themselves to a very wide variety of shapes and sizes. By the use of auxiliary ferrous hangers, held by the magnets, all sorts of small objects, ferrous or non-ferrous, may also be handled. Made by Eriez Mfg. Co., the units tolerate temperatures up to 750 F.

For details, use **Key # MH-28** on inquiry card on page 1.

EXPLOSION-PROOF TRUCKS

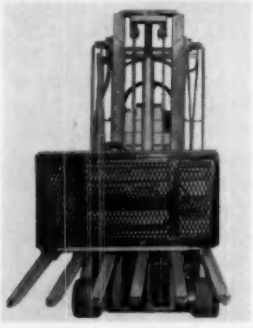
Flammable fumes or organic dusts in explosive concentrations in the air create a hazard which precludes the use of conventional



materials handling equipment. Powered fork lift trucks for such areas must be so constructed that no sparks or flames may be emitted to the ambient explosive atmosphere. Therefore, all motors, switches and similar electrical components must be enclosed in suitable housings. Revolvator Company's present explosion-proof models are engineered to exceed safety requirements. Both operator "stand-on" and "walk-along" models of the Go-Getter Series 54.00

are available. The new Model 54.22 high lift straddle-type fork truck incorporates many special features such as anti-kick-back steering and carries Underwriters' Laboratories label (Type EX) for use in Class I Group D explosion hazardous areas.

For details, use **Key # MH-29** on inquiry card on page 1.



PUSH-OFF DEVICE AND SIDE SHIFTER

A Push-Off Device with Side Shifter and Multiple Forks has been developed by Lewis-Shepard Products, Inc. This special attachment is designed for establishments using a Take-It or Leave-It Pallet System, whereby unit loads are handled in process and placed in storage on pallets but are shipped without pallets. The multi-purpose truck is capable of handling both types of loads. When loading carriers, the multiple tined forks are slid between the small stringers on the top of the take-it-or-leave-it pallet and the load raised off. The load is then moved to the carrier and pushed off the forks.

For details, use **Key # MH-30** on inquiry card on page 1.

THIRD WHEEL FOR HAND TRUCK

A new "Load Transfer Wheel" attachment to the popular "Shop Caddy" has been announced by Grand Specialities Co. The new "3rd Wheel" takes the load off the operator and keeps it on the Shop Caddy itself making it possible to "truck" the load with minimum effort. By simply "lifting" the load —with the use of the 4-Speed Hydraulic Shop Caddy Pump—to the correct height indicated on the side frame, the Caddy automatically rests on the new load Transfer Wheel attachment. The operator

then simply "pushes" without any need of actually "holding up" the load.

The new "Load Wheel" may be attached to Shop Caddies now in use and are available from the manufacturer. The Shop Caddy handles loads up to ¼ ton in shops, shipping rooms, etc., for lifting machinery, moving appliances, handling crates, installing dies, loading and unloading trucks, etc. Available in either 36″ lift or 54″ lift.

For details, use **Key # MH-31** on inquiry card on page 1.

LIFT TRUCK ENCLOSURE

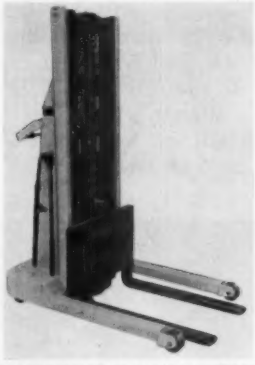
A new type of cab enclosure for fork lift trucks allows uninterrupted outdoor production through all types of weather. Custom built from heavy army duck canvas which is waterproof and mildewproof, the D & M Cab Enclosure keeps the operator dry and comfortable.

Clear vision and greater safety while loading and unloading is assured by an unbreakable windshield, as well as left, right, rear and roof panels of unbreakable glass. A screen insert in the rear

curtain checks the flow of carbon monoxide.

The D & M Cab Enclosure can be rolled up and held with straps in mild weather. A two-way zipper, which can be opened either from the inside or outside, makes it easy to get in and out. The zipper will not rust, freeze or corrode. Custom frameworks are available for machines not equipped with factory guards.

For details, use **Key # MH-32** on inquiry card on page 1.



TELESCOPIC LIFT TRUCK

The Big Joe Mfg. Co. has made available a new telescopic lift truck. Ruggedly constructed, it carries the synchronized 12-volt heavy duty system, has a load capacity of 1000 lbs. and a lifting height to 160 inches. Due to low styling, this Big Joe unit has special value for in-and-out travel from room to room, avoiding overhead obstructions. Other models in this series include the "Yardmaster 29," equipped with pneumatic tires. It has a telescopic lifting height to 110 inches and a low door clearance of 78 inches, providing convenient transportation of loads in and out of the plant. It travels fully loaded over rough surfaces.

For details, use **Key # MH-33** on inquiry card on page 1.

Apologies!

In the January issue of "Safety Maintenance" in the section, "Keeping Up With Floor Maintenance Developments," illustrations were inadvertently switched for the descriptions of a rough surface floor scrubber made by Nobles Engineering & Mfg. Co., and the wet-and-dry vacuum machine developed by Multi-Clean Products, Inc.

We offer our apologies to the Multi-Clean and the Nobles companies for using the other company's photograph to illustrate their equipment.

Maintenance Show

(from page 40)

***"How to Use Industrial Engineering Techniques in Maintenance":* George Lewis, Industrial Engineering Dept., Union Carbide Corp., New York.**

The older, well-established techniques such as time study, process charts, man-machine charts, detail layout, have been the vehicle for the tremendous contribution that industrial engineering has made to industry. These techniques have also been very helpful in maintenance work and will continue to serve us well.

One of the newer techniques is "memomotion," a motion picture method for analyzing the main movements in an operation to improve methods, define problem areas, or set standards. It is a special form of micromotion study in which the motion pictures are taken at unusually slow speeds. In maintenance work, memomotion is most useful in studying: long cycle operation (major overhauls), irregular cycle operation (non-standardized jobs), crew activities, multi-machine operation, shop layout and materials handling, and recorded picture histories. The films must of course be analyzed and are useful in showing both management and unions any changes in methods.

***"Research and Development Techniques In Maintenance":* J. H. Prau, Plant Engineer, Philip Carey Mfg. Co., Plymouth Meeting, Pa.**

There is a growing tendency to coordinate all the functions of the broad maintenance area under Plant Engineering. A Plant Engineer may consider himself far removed from the field of research and development, but the new problems he faces each day reflect the research and development background of his plant.

In evaluating the new products of a supplier, it is necessary to consider the question of future maintenance and parts-replacement for the item. Will it become a more or less permanent part of the supplier's line? Also consider such questions as: suitability of application over the long term, adequate lubrication facilities, keys and shear pins on shafts for possible overloads, safety shields to protect personnel, ease of installation of spare parts, ability to withstand plant abuse, adequate clearances, properly protected motors, etc.

The most reliable and best performing equipment is rarely the least expensive. The Plant Engineer must take a strong stand for his convictions even though extra money and extra time may be needed for the delivery of equipment that will provide maximum reliability and productivity.

***"Water Pollution, Its Effect on Natural Waters and Control":* R. W. Ladd, Technology Engineer, Delaware Refinery, Tidewater Oil Co., Delaware City, Del.**

While individual cases vary widely, certain general effects for common pollutants are known: Acidity (corrosion of metals and concrete, destruction of plant and animal life); Alkalinity (corrosion of paint and some metals, destruction of aquatic life); Oxygen Demand (destruction of animals and plants by depletion of oxygen supply by highly oxidizing compounds); Hardness (lower value for industrial uses); Dissolved solids (destruction of aquatic life); Poisons (destruction of aquatic life, non-potability); Taste & Odor (lowered value for recreational and domestic supply uses); High Temperature (Less value for industrial cooling, destruction of aquatic life); Suspended Matter (deposits in river channels and in industrial equipment, retardation of aquatic life).

Control measures for water pollution include: minimize the amount of waste; re-use of waste water; segregation of waste streams; treatment of waste by stripping, neutralization, solvent extraction, gravity separation, aeration, chemical conversion, filtration, and biological treatment.

***"Lubrication of Plain and Anti-Friction Bearings":* Dr. L. B. Sargent, Chief, Lubricants Div., Alcoa Research Laboratory, Aluminum Co., of America, New Kensington, Pa.**

First, analyze your problem: How important is minimum friction? What wear can be tolerated? Will scuffing be likely? Why chance rusting? Is external cooling needed? How will you handle dirt, wear and contamination?

Second, buy the right lubricant: Small plants should use the brand recommended by the equipment manufacturer. Medium plants can turn over lubrication requirements to a single supplier. Larger plants will have to buy in the open market to meet their own needs.

Third, control the use of lubricants: Test the lubricants. Have a code system to identify the various types used. Give oilers specific instructions on which lubricant to use, when to add, when to replace, when to filter.

TULITO

SAFETY CLAMP

(Patented. Other Patents Pending)

LOCKS INSTANTLY!

Absolute Safety Assured

Forget the dangers of high climbing ...use TULITO SAFETY CLAMPS. Thousands are now in use on every type of structure.

FULLY APPROVED BY INDUSTRIAL COMMISSIONERS AND SAFETY ENGINEERS.

MEYER MACHINE, INC.

Red Wing, Minnesota

(Use Key # P-18 on Inquiry Card on page 1)

***"D.C. Testing of Electrical Insulation As a Maintenance Tool":* Melvin E. Willis, Superintendent, Electrical Maintenance, Philadelphia Electric Co., Philadelphia, Pa.**

D.C. testing is a valuable maintenance tool and should be effective for use in all productive plants regardless of size or scope of equipment. The extent and type of tests will depend on the amount of money available for test equipment and in some cases a complete range of test equipment may be desirable.

Low voltage tests may be made on all sizes and types of components and have these advantages: 1. relatively inexpensive equipment; 2. semi-skilled manpower requirements; 3. simple and inexpensive records; 4. versatile usage—for

periodic short-term tests or for insulation condition by use of dielectric absorption curves.

High voltage D.C. tests are used to advantage to: 1. give more accurate indications of insulation condition; 2. make tests at more realistic voltages in reference to rating of equipment; 3. detect weak spots in insulation and allow preventive repairs to be made without in-service failures; 4. assure reliable operation of equipment until next scheduled maintenance period; 5. make proof tests easily and economically with small size portable equipment.

***"Electrical Maintenance Organization In Large Plants"*: D. R. C. Morris, Electrical Superintendent, Aluminum Co. of Canada, Ltd., Kitimat, B. C.**

In organizing and administering electrical maintenance in large plants, here are some of the important factors involved: 1. Develop a definite organization structure and assign appropriate responsibilities; 2. Select management personnel on the basis of skills and experience, considering also the potentials for future advancement; 3. In organizing manpower, decisions must be made between area versus centralized forces, use of straight trades labor versus multicraft labor, methods of training and evaluating personnel, etc.

***"Maintaining Electronic and Other Control Systems"*: Felix E. Dandois, Instrument Foreman, Westvaco Chlor-Alkali Div., Food Machinery & Chemical Corp., South Charleston, W. Va.**

Today we are doubling plant instrumentation every ten years and the maintenance of this equipment is growing dynamically. The four basic requirements for the maintenance of industrial-type instruments is: a well-rounded organization, proper facilities, good procedure methods, and an adequate training program.

In the facilities at our plant, each instrument maintenance mechanic has a separate bench equipped with supplies of air, natural gas, vacuum, and electricity, along with test gauges, air regulators, and small hand tools. There is a rotameter testing bench, constant temperature bath, caustic bath for cleaning control valves, flow meters, mercury cleaning table, grinding and buffing wheels, vises and large tools. There is a special partitioned area for servicing electronic instruments so work can be left overnight without tampering.

***"Testing the Insulation of Low Voltage Polyphase Motors"*: Ronald H. Secrest, Vice President—Service, S. & M. Electric Motor Repair, Inc., Trenton, N. J.**

Testing the insulation of electrical apparatus to predict equipment failure has become increasingly important. One method is the dielectric absorption test which applies increasingly higher voltages between the equipment windings and ground and reads the leakage current to ground. Another method is to take megohmmeter readings of the resistance between the equipment windings and ground by shorting the motor leads and testing from this common connection to ground. Periodic megohmmeter readings give a good indication of insulation condition during the near future, but do not provide a complete evaluation.

We have found that the major cause of motor breakdown from insulation failure is not a fault to ground but a blow-over between phases, especially in mush-wound motors operating at 480 volts and over. These between-phase failures can be predicted by taking advantage of the now prevalent dual-voltage motor connection. After measuring the line-to-ground resistance of the winding, open all external motor connections and take the insulation resistance between the four separate circuits.

Fig. 3. New employees' swimming pool was built: (1) to give employees comfort, (2) fit into fire protection plan.

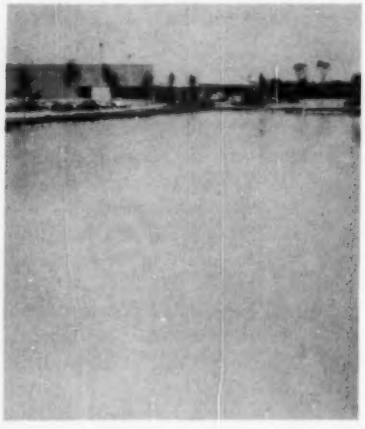


Fig. 4. Man-made lagoons, together with pool, reduced installation costs for water system, lower consumption.

Double-Duty Protection

(from page 43)

tion system, vital to all persons connected with the company. In case of fire, water from the pool would go directly into the sprinkler system. Second, it is used as a continuing research vehicle for a new chemical and water filter that the company is developing.

Naturally a swimming pool can't be built for nothing. But it can be built out of savings, which is what Flick-Reedy did by improvising an ingenious water conservation system. Instead of buying water from nearby Bensenville for its new plant, the company chose to excavate lagoons on the plant property and draw water from them. The lagoons are kept full by rain drainage from the plant's 5-acre roof and 5-acre parking area. These, together with the pool, have solved the plant's water supply problem.

As for cost, to run a water line from Bensenville and to erect a water storage tower would have cost a total of $280,000, based on insurance company requirements. On the other hand, the lagoon cost was $12,000. The swimming pool cost was $90,000 with an additional $30,000 for the pressure tank and pump system, for a total of $132,000. Thus, even after the pool was paid for, the company still saved money.

Figures 1 & 2 from Lake Shore, Inc. Figures 3 & 4 from Flick-Reedy Corp.

A series of appointments in the various glass sales departments of the *Merchandising Division* of *PITTSBURGH PLATE GLASS CO.* is announced by Paul A. Ketchum, vice president—glass sales, Merchandising Division. Appointed are *Frederic C. Paffard, Jr.*, to manager, safety glass sales; *John G. Engber* to assistant manager, safety glass sales; *Donald C. Hegnes* to the newly-created position of manager—warehouse sales, glass products; and *William E. McConnell* to assistant manager, window glass sales.

Charles F. Hoffman, most recently an account supervisor with the Pittsburgh branch of Erwin Wasey, Ruthrauff & Ryan, Inc., advertising agency, has been appointed advertising manager, *Industrial Division, JOY MFG. CO.*, with headquarters at the company's Pittsburgh executive offices. He will supervise space advertising, advertising literature and sales promotion of air compressors, ventilating equipment and products of the Turbodynamics Department.

WELSH MFG. CO., manufacturer of industrial and welding safety products announces the opening of its new southwest warehouse facilities at 142 Howell St., Dallas, Texas. Mail address: PO Box 10187, Industrial Station, Dallas. *Earl Mitterlener* will be resident manager of this second Welsh regional warehouse. Other Welsh warehouse is located at 788 Mission St., San Francisco, California.

Gale M. Hallett

Gale M. Hallett is new sales manager of Charleston Rubber Company, Charleston, South Carolina, continuing also as advertising director. Mr. Hallett, a native of LaGrange, Ill., holds a degree of bachelor of science in chemistry from the University of Illinois. As sales manager, he will be in charge of developing and directing sales of products for Charleston Rubber Company, internationally known as a leader in manufacture of protective gloves and sleeves; among them dry-box gloves, for use in nuclear and biological research; lead-loaded neoprene rubber gloves for protection against radiation; pure rubber gloves for protection against high voltage in the electric field; specially formulated synthetic rubber gloves for protection against chemicals and for general protective use in industry.

To provide superior service to meet the demands of expanding materials handling equipment requirements in the Chicago area and to prepare for higher levels of service activity, *Yale Materials Handling Division, YALE & TOWNE MFG. CO.*, has moved its industrial lift truck and tractor shovel Sales and Service Branch to Franklin Park, Ill. Said to be the largest, most modern facility of its type in the country, and centrally located at 9335 Belmont Ave. in Franklin Park, the new Yale Branch is close to O'Hare Airport, a mile and one-half from the Illinois Tollroad and two miles from the Northwest Expressway from Chicago's Loop, scheduled to open early in 1960. The facilities themselves comprise two, large, separate service shops, one for standard size industrial lift trucks and a second for giant handling equipment of higher capacities.

OXY-CATALYST, INC., Devon, Pennsylvania, manufacturer of catalytic exhaust purifiers, announces the appointment of *J. H. McLoughlin* as Northeast U. S. representative. Mr. McLoughlin has been representing Oxy-Catalyst for several years in upper New York State. The new appointment adds the states of Vermont, New Hampshire and Maine to his territory. McLoughlin resides at—4 Wadsworth Lane, Utica, New York.

NATIONAL FOAM SYSTEM, INC., manufacturers of fire-fighting foam liquids and foam devices, has appointed *H. C. R. Folmer*, Fort Lauderdale, as its Florida distributor.

FURANE PLASTICS, INC., leader and pioneer in the formulation of epoxy resins, has opened an Eastern plant in Hempstead, Long Island, New York. In fulfilling the growing demands for its plastics materials on the Eastern Seaboard, Furane has consolidated its activities under one management. *Leon Wynn* will serve as Eastern Sales Manager and will be in charge of the operation. Approximately 6,000 square feet are available at the Hempstead facility.

Coincidental with the opening of the New York office is the appointment of *Samuel A. Jeffries, Inc.* as sales representative in Pennsylvania, Maryland and Washington, D. C. for Furane's electrical insulating resins.

Robert W. Richardson

THE SPENCER TURBINE CO., manufacturers of turbo-compressors, installed vacuum cleaning systems, heavy duty portable vacuum cleaners and pneumatic conveying systems, has announced the appointment of *Robert W. Richardson* as sales manager. Mr. Richardson has been connected with Spencer since 1940, having served as assistant sales manager since 1957. He is a graduate of Colgate University and a member of the National Sales Executives Club.

Smico Sales Company, Minneapolis-based industrial sales firm, has been appointed sales representative for *TORIT MFG. CO.*, manufacturer of industrial dust collecting equipment, Frank Chase, Torit vice president in charge of sales, has announced. Smico will handle sales and application engineering in Minnesota and other north central states, with special emphasis on dust-collecting applications for the milling industry. In charge of the Torit activities will be *O. J. Zimmerman*, Smico Sales Company president, and *R. W. Pearson*, sales engineer for the firm.

AIR-SHIELDS, INC., manufacturers of specialized hospital equipment, announces that AMBU Rescue Breathing Equipment is now being manufactured at the

firm's Hatboro, Pa., plant. Although distributed for the past year by Air-Shields, Inc. in this country, the AMBU kit was formerly manufactured in Denmark where it was designed.

Wayne L. Niedens has been appointed sales representative by *THE PIONEER RUBBER CO.* for the company's Texas subsidiary. He will make his headquarters in New Orleans to cover Arkansas, Louisiana, Mississippi, western Tennessee and the Houston, Texas area for Pioneer's industrial glove products.

Elmer J. Purdy of Point Pleasant Beach, N. J., has been appointed hearing aid district sales representative for *ZENITH RADIO CORP.* of New York. The announcement was made by E. M. Kinney, Zenith vice president in charge of hearing aids.

Allan Bird is appointed to the newly-created position of Sales Development Manager, *R. S. LANDAUER, JR., & CO.*, Matteson, Illinois. The Landauer Company services leading industrial, educational, and medical facilities with cumulative beta, gamma, neutron and x-ray radiation film badge reports. Mr. Bird will study the current and future sales potential of radiation safety services throughout the United States and will contact Landauer clients and prospects.

A new national trade association representing manufacturers of metal doors and frames has been formed with a Pittsburgh area executive as its first president, it was announced recently.

The National Steel Door and Frame Association was formed in Chicago following a recent meeting of top management officials of seven leading companies in this field. Herbert W. Wehe, Jr., executive vice president of Overly Mfg. Co., was elected president.

Other officers are: Joseph A. Childress, vice president of American Metal Works, vice president; and Joseph N. Saino, partner in Saino Mfg. Co., secretary-treasurer.

The new association will attempt, Mr. Wehe said, to co-operate with and augment the efforts of several existing regional organizations to develop and maintain practical standards and policies for the industry as a whole.

A new Safety Service Center has been opened at 8865 Schaefer Road by the *Safety Products Division AMERICAN OPTICAL CO.* According to Joseph F. Kostrek, local manager, the center is a factory warehouse designed to serve the industrial safety requirements in this area.

Charles Beane has joined the Sales Organization of *FIBRE-METAL PRODUCTS CO.* and will cover the New England and New York State territory, calling on distributors of welding and safety supplies. He will reside in Athol, Mass., and was formerly with Heywood-Wakefield Company of Gardner, Mass. He is a graduate of the Bryant College of Business Administration.

John C. Pangborn

John C. Pangborn, co-founder of Pangborn Corporation, died at his home in Hagerstown, Md. on Christmas Eve. Prominent industrialist and civic leader, Mr. Pangborn was 75 years old.

He was born in Leroy, Minnesota and, along with his brother Thomas W. Pangborn, founded the well known blast cleaning and dust control manufacturing concern in New York City in 1904. The company and its management moved to Hagerstown in 1912. For many years he was active in sales, becoming widely acquainted in American industry. In recent years he has served as Vice Chairman of the Board of Directors and of the Pangborn Foundation.

Safety Appointments

Management changes in the Safety Department at the Aliquippa Works of Jones & Laughlin Steel Corporation have been announced by Paul H. Devaney, Works Manager. *Harold W. Gilberg* has been appointed Works Safety Administrator. He formerly was Assistant Superintendent, Safety and Welfare Department. He succeeds *Earl H. Houck*, who has retired from his duties as Superintendent of Safety and Welfare after more than 33 years of service.

James L. Mercer has been appointed Assistant Works Safety Administrator. He formerly was a Safety Inspector.

Appointment of *Dr. Joseph R. Albrecht* as full-time plant physician has been announced by Alan Wood Steel Company. Dr. Albrecht will report to Dr. W. Stuart Watson, who becomes company medical director, as part of the newly enlarged medical department.

A graduate of the University of Pittsburgh, where he earned both his BS and MD degrees, Dr. Albrecht joins Alan Wood with a wide medical background, including private practice, medical administration and industrial medicine. Formerly, he was associate medical director of Reading Hospital and also had been director of professional services and associate medical director at Hahnemann Medical College and Hospital of Philadelphia.

All dispensary operations and personnel, including the company's five registered nurses, will come under Dr. Albrecht's supervision. Alan Wood's medical facilities include a complete main dispensary, fully equipped to handle industrial-type first aid treatment. A company station wagon also is available for immediate emergency service throughout the plant.

Appointment of *Francis J. (Bud) Dery* as safety director for Ford Motor Company was announced by R. T. Ross, manager of employee services. Mr. Dery, formerly safety engineer for the Metal Stamping Division, succeeds *Raymond D. Harvey*, who has resigned from the company.

The new Ford safety director's career in safety work began when he entered military service in 1943. As a member of the U. S. Army Counter-Intelligence Corps, his primary assignment was investigation of the causes of airplane crashes. After separation from the service in 1946, he served as safety engineer for the Murray Corporation until 1954, when he assumed a similar position at the Ford Metal Stamping Division.

W. W. (Wally) Buxton, who has devoted his entire industrial career to accident prevention and safety, has been appointed to the newly created position of Corporate Safety Director for Aerojet-General Corporation. He joined Aerojet in 1958, forming the new Safety Division for the Solid Rocket Plant in Sacramento. Previously, Buxton for six years was Safety Director at American Cyanamid Company in the Plastics and Resins Division, Pittsburgh, Pa. He also served 12 years at Liberty Mutual Insurance Company in Safety work, and for three years was Safety Engineer with the Philco Corporation.

His new duties at Aerojet will require coordination of the over-all company safety program for 24,000 employees in this country and abroad. *Fred S. Miller*, veteran Aerojet employee, has been named Manager of the Solid Rocket Plant Safety Division to replace Buxton.

George W. Nickel, Jr. has been named Manager of Safety for the Armstrong Cork Company. In this capacity he will supervise safety programs on a company-wide basis. Mr. Nickel, who has been with Armstrong for 10 years, has served as Supervisor of Safety and Fire Protection for the Company's Floor Plant in Lancaster, Pennsylvania, for the past three years.

Mr. Nickel will succeed Amos S. Keen who is retiring after more than 46 years of service with Armstrong. Kenneth B. Corbett has been named to succeed Mr. Nickel as Supervisor of Safety and Fire Protection at the Lancaster Floor Plant.

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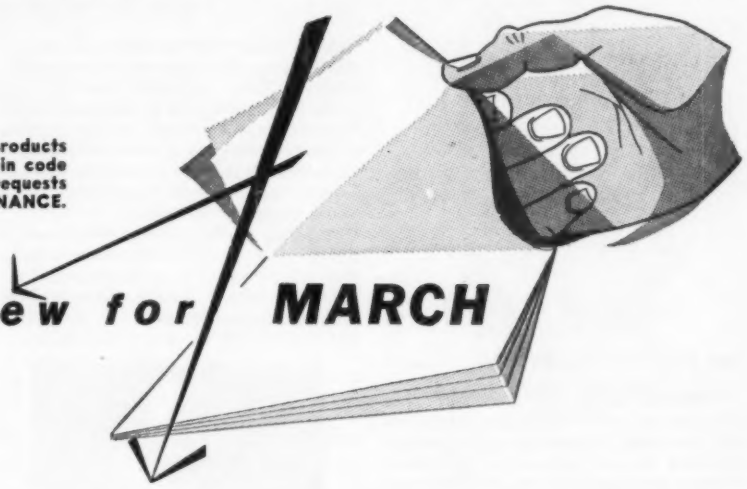


what's new for MARCH

MOLDABLE EAR PLUGS

(Use Key # 633 on Inquiry Card on page 1)

THE SELF-MOLDING, pliable, self-sealing properties of the new Pep Ear Defender, available from Protecto Ear Plugs, Inc., eliminate fitting problems and make reinsertion unnecessary. The malleable ear insert fits all ear canals regardless of shape or size. Its cohesive force seals the ear canal and creates a barrier against harmful noises. The material is free of toxic or injurious agents and cannot harm the ear drum or canal. It is suitable for such noisy operations as work with riveting machines, power saws, milling machines, power hammers, pneumatic tools, etc.

LIGHTWEIGHT SAFETY OXFORD

(Use Key # 634 on Inquiry Card on page 1)

A LIGHTER-WEIGHT pigskin safety shoe, saving a pound or more per pair in weight over conventional safety oxfords, has been introduced by Haus of Krause. The Sportlite shoe incorporates steel toe protection with sport shoe styling. A specially designed foundation for the steel box has a channel in which the edges of the box ride to prevent spreading under impact, and also prevent the box from cutting into the lightweight sole.

The uppers are of brushed pigskin tanned with Kemi-Klad leather protector, said to resist water, water-borne stains, acids, alkalis, etc. The shoes can be easily brushed or washed. According to the makers, they also conform to atomic energy cleaning specifications (radiation).

Tiny airshafts in the pigskin permit ventilation for healthier feet, and the lightweight, oil-resistant Neoprene Nitro-crepe sole is said to be flexible, buoyant, provide comfortable wear, and reduce fatigue. The shoe is intended for all but extremely heavy duty work, and it is believed that its casual appearance and comfort will overcome the reluctance of workers to wear safety shoes.

NEW WEAVE IN WORK CLOTHES

(Use Key # 635 on Inquiry Card on page 1)

A NEW WEAVE, said to offer exceptional comfort to wearers of their lint-free, acid-resistant garments through permitting rapid evaporation of body moisture, has been developed by Worklon, Inc. The Resistall weave, which uses 100% DuPont Dacron yarns, will be available in men's shirts, pants, coveralls, and caps; in ladies' slacks sets; and in laboratory coats for both ladies and men. The clothing is of the wash-and-wear variety, requires a minimum of care, and has a high resistance to acids and corrosive chemicals.

PIPE THAWING UNIT

(Use Key # 636 on Inquiry Card on page 1)

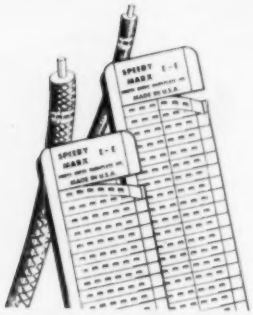
A 15-FOOT length of ¾-inch galvanized water pipe was thawed in 4 minutes with a new transformer type pipe thawing unit named Porta-Thaw. The unit, a product of Hobart Brothers Co., will operate on ordinary house current of 110 or 220 volts, single phase, 50 or 60 cycles, AC, and can be carried by one man. Output rating of the unit is 300 amps., 10 volts on 100% duty cycle and there are no electrical connections between the power line and the output terminals making it as safe to operate as a household appliance.

FIRE EXTINGUISHING WASTE CAN

(Use Key # 637 on Inquiry Card on page 1)

A UNIQUE principle, using the smoke from the originating fire as the extinguishing agent, is featured in the new Flame-Tamer waste receptacle manufactured by Rock Royal Corp. If a fire starts in the receptacle, the smoke is diverted across the opening and back toward the fire, preventing any oxygen from reaching the flame and thus forcing its extinction.

This simple principle permits the receptacle to be open for use at all times. The Flame-Tamer operates without chemicals or moving parts, and, in addition, requires no maintenance. Available in the 30-gallon Industrial Unit, the 15-gallon Commercial Unit, a Wastebasket Unit and the Hospital Bedside Unit.



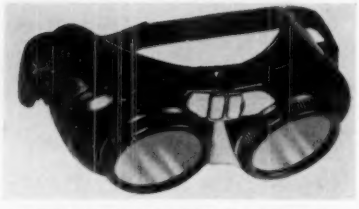
ALUMINUM ADHESIVE WIRE MARKERS

(Use Key # 638 on Inquiry Card on page 1)

PRESSURE-SENSITIVE aluminum foil wire markers from North Shore Nameplate are now being furnished on quick-dispensing cards for easy, convenient application. Because of a specially compounded coating on the new Red Rocket cards—the Speedy-Marx aluminum markers can be stripped off instantly without distortion. A handy starter strip aids in removing the markers and also protects the remaining markers when it is pressed back into place.

Foil wire markers are supplied in two sizes: one for wire under ¼" dia., the other for wire ¼" dia. and above. They are inherently resistant to soil, water, and grease; have a transparent surface coating which resists rubbing and abrasion; and conform to NEMA-ASA specifications.

When mounted on the new cards, Speedy-Marx aluminum wire markers have an unlimited shelf life, and their "sticking" qualities remain unimpaired as well. Precut for easy handling, the aluminum bends under lightest finger pressure to fit any wire diameter.



WELDERS' COVER GOGGLES

(Use Key # 639 on Inquiry Card on page 1)

A NEW DESIGN in welders' goggles that utilizes angled lenses is embodied in Seesall Cover-Spec Goggles from Glendale Optical Co. With only a slight tilt of the head, the wearer is presented with a clear view of the entire work area. Blind spots are eliminated. Added features include: comfortable fit over the new style, larger spectacles, indirect ventilation, flexible leather protective nose guard, lightweight construction. The angled lens design serves to eliminate neck and shoulder fatigue.

SOLVENT-DETERGENT

(Use Key # 640 on Inquiry Card on page 1)

A SOLVENT-DETERGENT of exceedingly high penetrating and emulsifying action, has been announced by Tect, Inc. Teclene #135 is a form of Teclene modified with chlorinated solvents of low volatility to remove heavy oil, grease and other contaminants. It may be brushed or sprayed on the surface, then rinsed with either water, steam or solvents.

A liquid of the viscosity of light oil, it has no flash point and is of low toxicity, due in part to the slow evaporation rate of the material. Although alkaline, the product may be used in the cleaning of all metals and will not attack aluminum.

IMPROVED EYE BATH

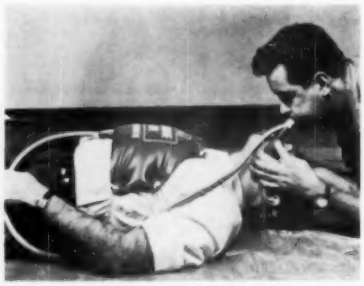
(Use Key # 641 on Inquiry Card on page 1)

DESIGNED TO cleanse, refresh and help soothe irritated eyes, Lauro-Boracic eye bath from Otis Clapp & Son, Inc., is a blending of eight active ingredients which results in a collyrium—a medication which works to relieve eye strain from bright light, close work, etc., and smarting and itching from sun and wind-burn, exposure to dust, smoke and other irritants. This collyrium has the same surface tension, osmotic pressure and pH of normal human tears. It is reported to be clear, sterile and non-irritating.

ALL-PURPOSE LIQUID CLEANER

(Use Key # 642 on Inquiry Card on page 1)

A MULTI-PURPOSE liquid compound that can be used for almost any industrial cleaning operation has been announced by Turco Products, Inc. The product, Turco Plaudit, is used for such operations as steam cleaning, emulsion cleaning, immersion cleaning, ultrasonic cleaning and wipe-on cleaning, to name only a few. It is safe on hands, painted surfaces, upholstery, etc., yet powerful enough to quickly and completely remove the heaviest soils found on road building equipment, parts transfer cases, drilling equipment and other hard-to-clean surfaces.



TRAINING UNIT FOR MOUTH-TO-MOUTH RESUSCITATION

(Use Key # 643 on Inquiry Card on page 1)

A TRAINING UNIT, which furnishes sanitary conditions while providing practice in the mouth-to-mouth technique of artificial respiration, is available from Medical Supply Co. The new Breathe Life Trainer permits accurate simulation of all steps of rescue breathing with a study "victim." The unit consists of a plastic lung in chest position; leading to this is an air tube with plastic mouthpiece which is inserted into the "victim's" mouth as well as that of the person practicing the technique. It is so constructed that neither person is in contact with the other's breathing or mouth, yet allows the trainee to inflate the imitation lung and hear the other's exhalation, thus learning the proper force and frequency with which the rescue breath should be delivered.

To simulate an air passageway stoppage, due to food, foreign obstruction or improper jaw position with resultant tongue obstruction of the passageway, the "victim" simply pinches the air tube and stops inflation of the practice lung. The trainee then takes corrective measures before proceeding further.

NEW PRESSURIZED DRY CHEMICAL

(Use Key # 644 on Inquiry Card on page 1)

A NEW 2½ POUND pressurized dry chemical extinguisher in chrome plate is available from Walter Kidde & Co. Approved by both Underwriters' Laboratories and the U. S. Coast Guard, it features simplified, self-evident operation for anyone picking up the lightweight portable in a fire emergency. The unit's nozzle is aimed at the base of the fire and the

actuating lever depressed; a cloud of fire-suffocating dry chemical immediately envelops the blaze. Its protected pressure gauge tells at a glance the unit's readiness for action. It may be easily and quickly recharged either from an air line or a compact, pressurized gas cartridge recharge kit.

EMERGENCY AC POWER

(Use Key #645 on Inquiry Card on page 1)

DESIGNED TO provide emergency AC power automatically and instantly in the event of power line failure, five standard models are available, with 60 cycle, 110 volt outputs from 40 to 150 watts, from Scranton Cellomatic Battery Corp. Special voltages and cycle outputs are also available. In addition to providing AC power, emergency lighting is also supplied automatically upon power failure. Standard models will illuminate an area approximately 70 x 90 feet with a directional type lamp.

Operation is completely automatic. Upon failure of the main power supply, a relay closes the contacts of a battery-energized circuit, lighting the lamp and starting the motor-generator. A special replaceable-cell, high-amperage industrial storage battery is kept fully charged automatically.

ELECTRICAL SAFETY HAT

(Use Key # 646 on Inquiry Card on page 1)

A SAFETY HAT especially designed for the electrical worker, which meets or exceeds all requirements of the Edison Electrical Institute specifications for insulating safety headgear, is offered by Willson Products Div., Ray-O-Vac Co.

Molded in one piece of tough, moisture-proof, resilient plastic, the volt shield is completely without joints or holes. Critical points have been reinforced for greater impact and penetration protection, allowing for longer-lasting service. The hat will withstand 40 footpounds of pressure without decrease in dielectric strength. Voltage protection is equally effective in temperature extremes. The hat is resistant to water, oil, grease, and most chemicals, allowing an even more versatile and expanded number of uses.

Volt shield is suspended with six plastic wedges attached to the Geodetic shock resistant suspension, and is fully non-conductive, eliminating all possibility of shock or electrocution should it come in contact with high voltage wires. Suspension is constructed to conform to the head of any worker and resists the tendency of the hat to shift, tilt, or crash against the skull under angular blows, while dissipating impact shock waves over a wide area of the head to allow for easier, safer, more complete shock absorption. Available in a cap style.

NEW TYPE LENS TISSUES

(Use Key # 647 on Inquiry Card on page 1)

TWO NEW TYPES of silicone treated Sight Savers tissues for eyeglass cleaning stations: paper tissues for glass eyewear and rayon tissues for plastic or glass eyewear, are offered by Dow Corning Corp. The #65 paper tissue has a soft-textured, embossed surface that gives greater cleaning and polishing action and is easier to grip. #66 Sight Savers rayon tissue is guaranteed not to scratch plastic eyewear because dirt particles are absorbed into the loosely-woven surface of the tissue. Both tissues are designed to fit the regular plunger-type wall dispenser.

HIGH GLOSS FLOOR SPRAY

(Use Key # 648 on Inquiry Card on page 1)

A NON-SLIP floor buffing solution, designed to give floors greater hardness for better and longer wear, is available from Excelsior Varnish, Inc. The product, Surface Glaze, contains silicone to provide extra high gloss. The solution is in spray form and can be dispensed from any spray container which will release a fine mist. It may then be buffed until desired gloss is obtained. This floor spray, which the company asserts will save hours in maintenance time, is intended for use on any type of waxed or waxless finish.

ADJUSTABLE SCAFFOLD FRAME

(Use Key #649 on Inquiry Card on page 1)

A NEW adjustable tubular steel scaffold, designed so that adjustments to any working height can be made quickly by one man, has been developed by Marvel Equipment Corp. It has frames 28" wide by 4' high, with an accompanying A-Justo frame that easily telescopes into the legs of the bottom unit, and is constructed to be free from binding. The end panels do not protrude above the work platform, which results in more free work area. The 2-feet adjustment can be made in 3" increments to satisfy a variety of maintenance requirements. Narrow width permits the entire unit to be rolled through doors, hallways, onto elevators, etc.

OIL TANK ADDITIVE

(Use Key # 650 on Inquiry Card on page 1)

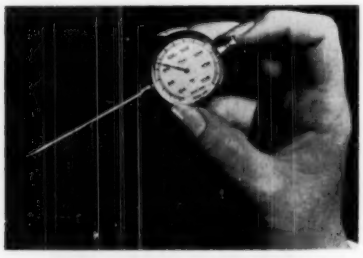
REDUCED operating costs of fuel oil burning installations can be realized through occasional use of a new liquid chemical additive, reports the manufacturer of Tank-Cue, Document House, Chemical Div. The formula dissolves precipitated oil sludge and disperses entrapped water so that both of these elements, present in all fuel oils, can be fed to the flames and burned off during routine burner operations. A decline in parts failures due to rust and corrosion, as well as minimal repair time, follows the systematic elimination of water and vapor from the tank and lines. Average systems require one to two quarts of the product prior to pumping each 1000 gallons of oil.

CHLORINE-IN-AIR DETECTOR

(Use Key # 651 on Inquiry Card on page 1)

A FIELD DETECTOR kit for the measurement of chlorine-in-air in concentrations ranging from one-half to 20 parts per million has been developed by Mine Safety Appliances Co. The new instrument employs an aspirator bulb for drawing samples across a "break-tip" detector tube containing an impregnated silica gel. The amount of chlorine in air is indicated by the proportional length of blue stain created by reaction of the chlorine with the silica gel. The instrument also permits sampling from remote locations.

Chlorine is widely used in the chemical industries, in textile and paper plants as a bleach, and as a water purification agent. A maximum allowable concentration of one part per million has been established by governmental industrial hygienists.



UNBREAKABLE CLINICAL THERMOMETER

(Use Key # 652 on Inquiry Card on page 1)

RECENTLY INTRODUCED by the Cary Thermometer Co., the Cary Precision Clinical Thermometer is an unbreakable, temperature-sensitive combination of metals encased in stainless steel, which substitutes for conventional mercury and glass. Easy readability is combined with safety by means of a 1¼ inch watch-like dial. "Shaking down" is eliminated by a re-set button, like that on a stop-watch, which re-zeroes the instrument.

Shock-proof and water-proof, the thermometer may be sterilized in the usual fashion with alcohol or disinfectant, and may be used with comfort either orally or rectally. Tested by the Food and Drug Administration and the National Bureau of Standards, the Cary meets all federal thermometer requirements. Individually inspected and numbered in Switzerland, and retested on arrival here, they are fully guaranteed against manufacturing defects.

DUST COLLECTOR UNIT

(Use Key # 653 on Inquiry Card on page 1)

AN ECONOMIC dust collector, designed for efficient removal and collection of metal and wood dust from grinding, sanding, polishing and other dust-generating operations, is offered by Surty Mfg. Co. Dust is drawn from source of generation, through ducts, into the chamber of the unit at velocities up to 6000 F.P.M. It is then pulled through filter tubes, the residue falling into the receptacle at the unit's base. Clean air is filtered at low velocity through the sides of the tubes, drawn into the fan housing and discharged through an outlet into the room or outside, as required.

DRY BOX GLOVES

(Use Key # 654 on Inquiry Card on page 1)

SAFETY in the handling of radioactive materials under dry box conditions is assured by new Dry Box Gloves, reports their manufacturer, the Surety Rubber Co. Made to the user's specifications, the gloves are fabricated of either rubber, neoprene or Sureseal, depending on the need. Their flexibility and suppleness make them highly suited to the positive manipulation of delicate, hard-to-handle atomic materials.

GERM-PROOF TOILET SEATS

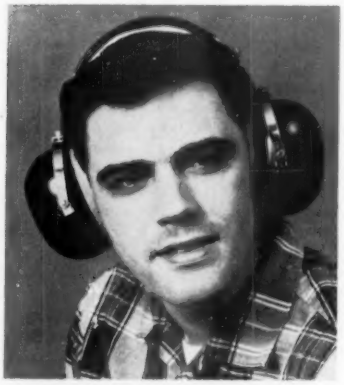
(Use Key # 655 on Inquiry Card on page 1)

A GERM-PROOF toilet seat, tradenamed Puritan, is being manufactured by Century Products, Inc. Key to the germ-proofing is Corobex. Introduced into the melamine-alkyd seat finish, this new hygienic bacteriostat is claimed to odor-proof, mold-proof and mildew-proof, in addition to protecting against germs. Washed with soap and water, seats are reputed to remain permanently "hospital clean." Germ-proof qualities have been certified through extensive checks by leading independent testing laboratories, according to the manufacturer.

CHEST-WEAR VOICE AMPLIFIER

(Use Key # 656 on Inquiry Card on page 1)

A PORTABLE public address system, which is 6" square, weighs only two pounds, and is attractive in appearance, has been announced by Antrex Corp. Self-powered by penlight-size flashlight batteries, and employing a multi-stage transistor, Chest Voice CV-80 is instantly ready for use. The new amplifier offers personal voice communication indoors and outdoors for anyone requiring free use of both hands, and can be used alternately as a platform public address system with accessory hand held microphone, or stand-type microphone. In conjunction with gas, oxygen, or other masks, the unit may be used with accessory throat microphone to provide clear communication.



MUFF-TYPE HEARING PROTECTOR

(Use Key # 657 on Inquiry Card on page 1)

AN EAR MUFF type hearing guard, which permits normal conversation while protecting against harmful noise, is available from the Industrial Div. of International Latex Corp. Scientifically designed to meet the standards of the U.S. Air Force and Navy, the Hush Sound Protector removes the hazard of hearing impairment caused by high-level shriek, high frequency whistle, high speed air equipment and jet engines, etc. and is cited by the company as a means of eliminating accidents and production lags caused by noise exposure fatigue.

Unit is lightweight and comfortable to wear. The ear cup is made of a reinforced plastic shell for maximum impact resistance. The shell is filled with a sound-proofing polyurethane foam and cushioned with soft vinyl for positive head fit. Headpiece is chrome spring steel with a vinyl head cushion.

WRAP-AROUND SIDE SHIELDS ON SPECTACLES

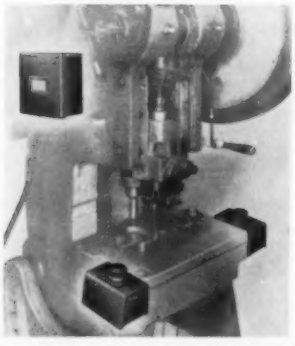
(Use Key # 658 on Inquiry Card on page 1)

NEW WRAP-AROUND side shields and temple combinations are announced by Welsh Mfg. Co. Side shield, as integral part of temple, permits fast easy adaptation of safety spectacles to workers needs. Inventory requirements are reduced by eliminating need for stocking of wide range of temples and side shields separately. Spectacles with these combination temples and side shields lie flat resting on side shields when not in use, and preventing lens scratching.

SAFETY SHOES AND BOOTS

(Use Key # 659 on Inquiry Card on page 1)

OFF-THE-JOB safety, as well as safety on the job, is reported by Hy-Test Div., International Shoe Co., as featured in three new oxfords and two boots added to its line. All styles can be worn for work or for play. The oxford line includes a dirty-buck, an embossed 4-eyelet, and a casual style. The boot includes an 8-inch sportsman type nok-a-bout boot and a 10-inch all-purpose black plain-toe boot. All five styles feature the Anchor Flange steel box toe.

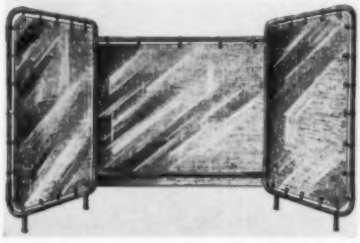


TWO HAND PRESS CONTROL

(Use Key # 660 on Inquiry Card on page 1)

A STURDY, electro-magnetic two-hand push button press control, designed specifically to keep both hands of the operator safely away from the stroke of the power press ram, has been announced by Durant Tool Co. The new Ambi-Trip will energize the solenoid of a press-clutch only if both buttons are simultaneously pressed. No stroke is possible if either push button is tied or held down.

A self-contained unit that can be set to operate a single-stroke or continuous press, it requires no external cams or switches and employs a unique design of trouble-free power relays. When switch is off, the buttons will not trip the press.



PORTABLE ALUMINIZED SCREEN

(Use Key # 661 on Inquiry Card on page 1)

MADE OF 1" tubular steel with slip joint construction for quick assembly, and curtain material of Johns-Manville aluminized asbestos—aluminum foil permanently laminated to Underwriters Grade asbestos cloth, this portable welding screen from Singer Glove Mfg. Co. protects against radiant heat and flame by reflection and withstands up to 1400° F.

The lightweight screen can be used as a 3-sided enclosure, or, by the addition of special legs, as a straight-line wall curtain. It is also available in a single panel version and a 4-sided unit that affords complete enclosure. Curtains of 12 oz. fire-resistant duck and neoprene-coated fiber glass are available for all screens.

NON-ABSORBENT TERRY GLOVES

(Use Key # 662 on Inquiry Card on page 1)

RESISTANCE TO oil and water are two of the features of a new line of Terri-Cord work gloves from Advance Glove Mfg. Co. They are reported to not absorb oil, become heavy, or become soggy. Hundreds of very closely knitted loops per square inch prolong the wear, cushion and protect the hand, and offer greater comfort. These new gloves are also heat resistant and offer insulation from cold. Perspiration will not harden or stiffen the gloves, which may be washed with very little shrinkage.

BACTERICIDAL CONCRETE FLOOR

(Use Key # 663 on Inquiry Card on page 1)

A NEW TYPE of concrete floor that kills bacteria and fungus, the Kalman Bactericidal Floor, is anticipated by its developer, the Kalman Floor Co., to reduce food plant maintenance and repair expenses and to help hospitals control a particular type of bacteria—Staphylococcus Aureus—which is threatening epidemic outbreaks in these institutions. The bactericidal agent is insoluble and potent, and is claimed to have full efficiency for the life of the floor.

Most food plant floors are pitted or slowly eaten away because when ingredients used in production fall onto the floor they usually produce a type of bacteria which creates a floor-corroding acid. The new floor is reported to reduce or entirely prevent this damage because it kills these bacteria before they can produce acid, or limits the number to a relatively harmless level. In hospitals, the most troublesome bacteria among strains resistant to antibiotic drugs, and causing an increased rate of patient infections, is Staphylococcus Aureus. The new flooring is reported very effective against this particular organism. For example, in one group of tests the new floor was 183 times more effective than the laboratory control—a well compacted concrete floor without the new bactericidal agent. The company advises, however, that its product will not eradicate the "staph" menace by itself, since many controls apparently are required.

PRESSURE SENSITIVE LANE MARKERS

(Use Key # 664 on Inquiry Card on page 1)

A TOUGH, vinyl-type material with pressure sensitive backing, for highway and floor marking, has been developed by Morgan Adhesives Co.

Mactac, the new material, can be applied by one person, without special equipment, at a saving of up to 50% and more over other methods now being used, the company asserts. Vehicles can cross these markers as soon as they are put down, as no drying time is necessary. Traffic serves to increase the material's adherence to the pavement.

Tests are said to have determined exceptional color durability, and the manufacturer cites Mactac's thinness as enabling it to become a part of the pavement, and to avoid snow plow and vehicle scuffing. Available in white or yellow.

zone mail indeed results in speed

The Post Office has divided 106 cities into postal delivery zones to speed mail delivery. Be sure to include zone number when writing to these cities; be sure to include *your* zone number in *your* return address — after the city, before the state.

Index to Advertisers and their Agencies

Alim Corp.	Inside Back Cover	Michael-Remo & Co., New York
American LaFrance Corp.	15	Barlow Advertising, Syracuse
Carbisulphoil Co.	53	Tracy-Locke Co., Inc., Dallas
Carpenter Mfg. Co.	5	Albert Frank-Guenther Law, Inc., Boston
Cover, H. S.	30	MacDonald-Cook Co., South Bend
Detex Watchclock Corp.	25	J. M. Kesslinger & Associates, Newark
Fibre-Metal Products Co.	26	Katula & Co., New York
Hild Floor Machine Co.	33	MacFarland-Aveyard & Co., Chicago
Hynson, Westcott & Dunning, Inc.	Back Cover	
Junkin Safety Appliance Co.	39	Farson, Huff, Northlich Adv., Louisville
Legge Co., Walter G.	32	J. M. Kesslinger & Associates, Newark
Littell Machine Co., F. J.	26	Vernon S. Weiler, Chicago
Masury-Young Co.	51	Hoag & Provandie, Inc., Boston
Meyer Machine, Inc.	57	Wm. L. Baxter Advertising, Minneapolis
Practical Manufacturing Co.	37	Fischbein Advertising Agency, Minneapolis
Rose Manufacturing Co.	19	Harold Walter Clark, Inc., Denver
Sigma Engineering Co.	53	Ross Advertising Agency, St. Louis
Watchemoket Optical Co.	Inside Front Cover	Darrell Prutzman Associates, Providence
Wilkins Co., Inc.	23	Laux Advertising, Inc., Ithaca
Williams Jewelry & Manufacturing Co.	35	Vernon S. Weiler, Chicago

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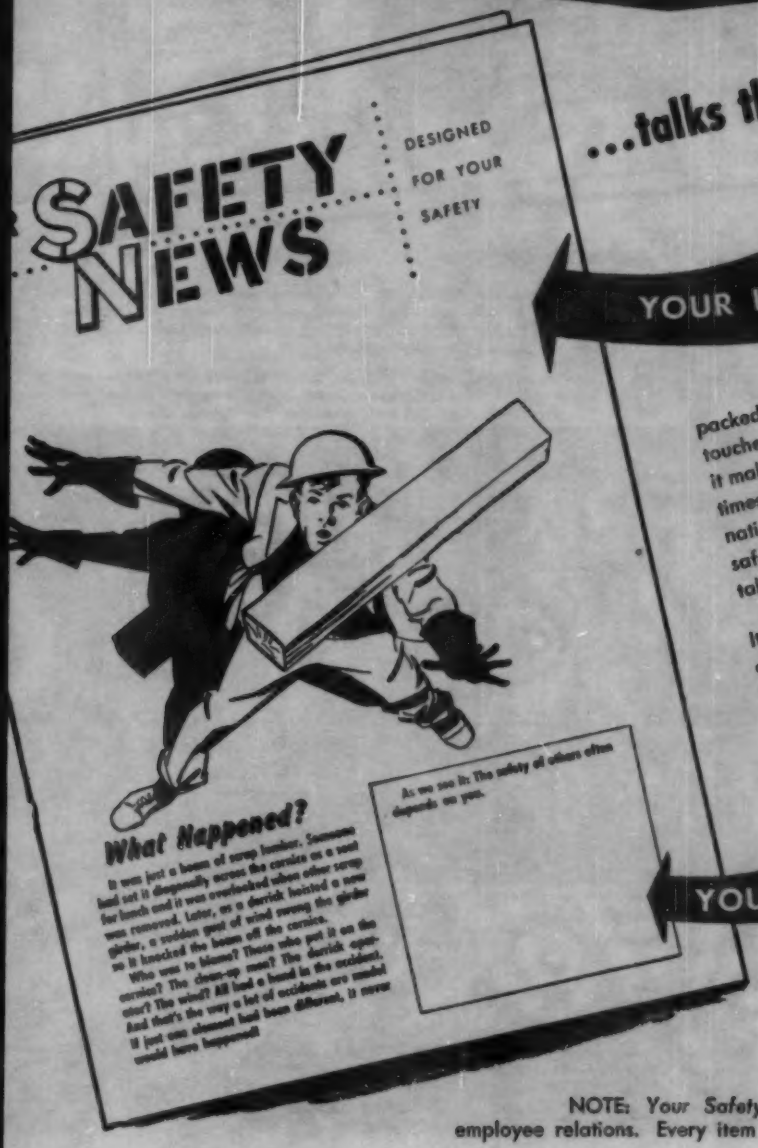
- Safety is made appealling . . vivid . . engaging . . colorful!
- Each worker clearly sees how safety benefits him . . . how doing his part helps others!
- You get enthusiastic safety cooperation instead of tolerance . . . from every employee . . . every month!



. . . talks the worker's language!

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Packed with pictures, alive with animated cartoons, touched with humour that gives snap to your message, it makes safety interesting and down to earth. Twelve times a year it covers accident hazards. Across the nation leading industrial firms state it's the only safety paper their employees will read . . . and take home to their families.

It gives the employer the advantages of personal contact . . . saves time and expense. One "lost time" accident prevented . . . more than pays for the yearly cost! Try it . . . it works!

YOUR SIGNATURE HERE!

Make Your Safety News your own publication . . . your good will ambassador . . . working for you toward better industrial relations. If you wish, your facsimile signature can be printed here to identify you with the message that gets next to your men and boosts morale.

NOTE: *Your Safety News* is designed to promote better employer-employee relations. Every item is carefully weighed and tailored to this viewpoint!

INSIDE PAGES
(Pages 2 and 3)

THOUGHTLESSNESS IS A THIEF
He'll steal his way into what you're doing, distract your attention and walk off with a finger, arm, eye or foot. Thoughtlessness takes many forms: it may be daydreaming, or worry about some personal problem, or just plain inattention. Anything that distracts you, especially around machinery, is a thief of your personal safety.
PLAYFULNESS IS A PIRATE
He is a deceptive rascal. His hi-jinks may put him in the spotlight, but his practical jokes and shoving-off often result in serious bodily injury and even death. And note this: he, himself, has lost a leg! As so often happens, horseplay can boomerang and the practical joker gets hurt too!
What You Should Know About Carbon Monoxide
This is a picture of carbon monoxide gas!
That's right, you can't see it. It's colorless, non-irritating, tasteless, practically odorless, but also deadly.
Here are the symptoms of carbon monoxide poisoning: First, a tight feeling across the forehead, followed by headache, throbbing temples, weariness, weakness, dizziness, nausea, loss of muscular control, increased pulse and breathing. BUT if the concentration of the poison gas is high, there may be loss of consciousness without these warning signals.
Just a few breaths of air containing 1% carbon monoxide can be fatal . . . so can one part of carbon monoxide in a thousand parts of air when breathed for 90 minutes.
It is possible for carbon monoxide to leak inside of a car if there is a loose exhaust pipe or manifold connection, blown-out exhaust gasket, cracked exhaust manifold, or leaky muffler. Play it safe:
1. Be sure your muffler and exhaust are in good condition (they can leak long before they become noisy).
2. Always keep a car window open, even a little, for fresh air.
AN INTIMATE LOOK AT FOUR VILLAINS
SAFETY LAZINESS IS A SIMON LEGREE
If you are lazy about safety rules, then accidents will have the whip hand. We are safety-lazy when we don't bother to use mechanical guards, to take time to get the right tools for the job, to wear protective equipment such as goggles, hard hats, safety shoes, respirators, gloves, etc. Yes, Simon Legree has a whole pack of accident hounds to trail you.
HAZARDOUS METHODS ARE A HOLD-UP MAN
This villain, unsafe work habits, likes to lie in ambush for the unwary. But how do we fall into bad working habits? It may be by trying to cut corners, by wanting to keep to the old way of doing things, or by over-confidence. It's hard for anyone to believe that an accident can happen to him. It's easier to make excuses to ourselves for ignoring safety rules, but alibis only lead us up a blind alley with an accident waiting in ambush.
Two Excellent Reasons
For Wearing Safety Shoes

EMPHASIZES SELF INTEREST

Your employee's self interest in his own safety is always emphasized. Constant safety consciousness is promoted by covering household hazards, transit to and from the job and on the job caution against accidents.

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Artwork is carefully chosen to lodge home each point persuasively. The cartoon style makes YOUR SAFETY NEWS as familiar and welcome as the picture packed Sunday supplement.

WINS READERS WITH A FOLKSY APPROACH

Keeping the contents folksy, adding the light note of humor, gets your message across with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of indifference.

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NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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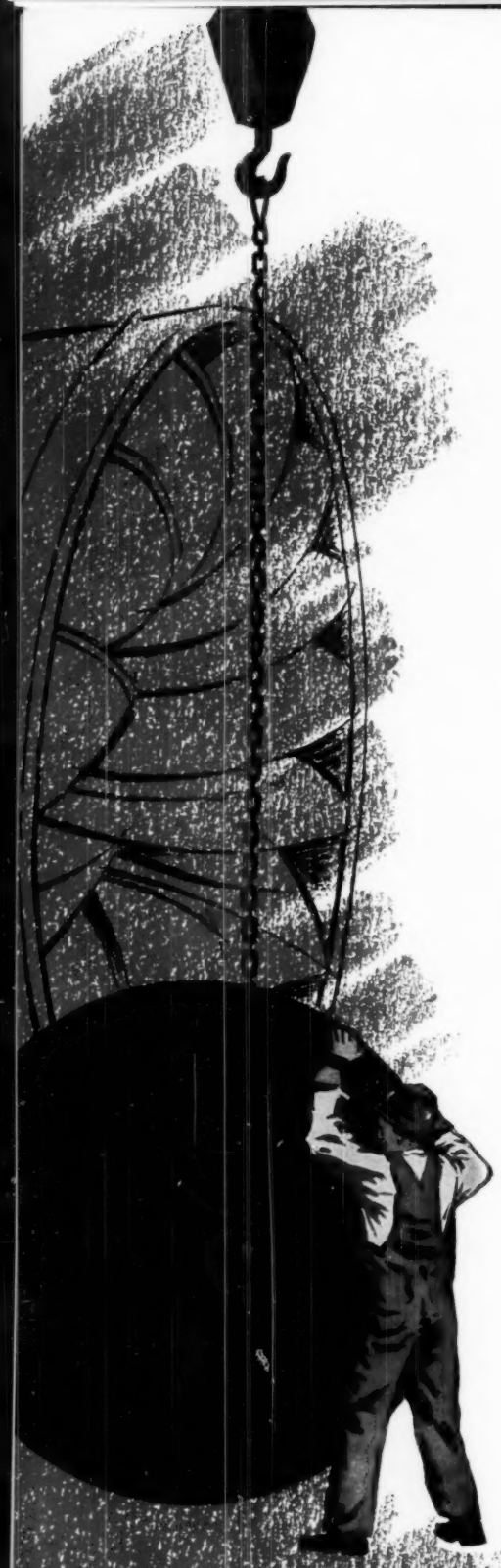

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